

Empirical Investigation of Multi-scale Innovation in Nigerian FinTech with Global Platforms

Onoriode Omorho Humphrey^{1*}, Ibegbulem Andreas Brutus¹,
Olatunji Emmanuel Adekunle¹, Asagba Samuel², Esiti Blankson Governor¹

¹Department of Business Administration, Southern Delta University, Ozoro, Delta State, Nigeria, ²Department of Marketing, Faculty of Administration and Management Sciences, Southern Delta University, Ozoro, Delta State, Nigeria. *Corresponding Author's Email: onoriodehumphrey74@gmail.com

Abstract

This study investigates the multi-scale innovation in Nigerian FinTech with global platforms, addressing the persistent "localization gap" between global capabilities and local impact. Employing an exploratory sequential mixed-methods design, the research comprised qualitative multiple case studies (34 interviews, 27 documents) followed by a quantitative survey of 300 Nigerian FinTech firms analyzed using PLS-SEM. The findings reveal that architectural modularity, platform governance and knowledge orchestration collectively mediate the platform performance relationship, accounting for 68% of the variance in ecosystem performance. Knowledge orchestration emerged as the dominant mechanism, accounting for 59.6% of the relationship, empirically validating practitioner emphasis on the "Naija factor" the tacit cultural, behavioral and institutional knowledge essential for market relevance. Institutional distance significantly attenuates these relationships ($\beta = -0.14$ to -0.22), while local partner capability significantly strengthens them ($\beta = 0.18$ to 0.26). The study introduces three theoretical contributions: resilient modularity architectural designs maintaining functionality under degraded conditions; translation capability the organizational competence rendering tacit local knowledge accessible across institutional boundaries; and institutional humility an orientation moderating institutional distance effects. Based on the findings, the study recommends amongst others for Nigerian policymakers, that enabling regulatory co-creation, recognizing informal institutions and supporting partner capability development can accelerate ecosystem performance. The study demonstrates that adaptive governance navigating institutional pluralism and institutional humility willingness to understand rather than impose to unlock the transformative potential of digital finance for inclusive innovation in emerging economies.

Keywords: FinTech, Innovation Orchestration, Institutional Distance, Knowledge Orchestration, Mixed Methods, Platform Ecosystems.

Introduction

In the contemporary digital era, multinational enterprises face a strategic paradox: leveraging the scale and network effects of global technology platforms while developing solutions deeply adapted to local contexts (1). This tension is particularly evident in Nigeria's FinTech ecosystem, where global platforms provide scalable technological infrastructure, but their value is mediated by infrastructural deficits, regulatory complexity and resilient socio-economic practices such as informal savings clubs (2). The central challenge is therefore not whether global platforms should be deployed, but how they can be orchestrated to stimulate rather than constrain locally relevant innovation. This study addresses this gap by examining three mediating mechanisms. Architectural modularity enables global platform components to be reconfigured for

local applications while preserving core stability (3). Platform governance balances global standards with flexibility required by local institutional conditions (4). Knowledge orchestration facilitates bidirectional learning, allowing local knowledge to influence global platform development while global expertise flows to local actors (5). The effectiveness of these mechanisms is expected to depend on contextual conditions, particularly institutional distance between the platform's home environment and Nigeria and local partner capability, defined by partners' ability to absorb, adapt and extend platform resources (6). The study adopts an exploratory sequential mixed-methods design. Multiple embedded case studies will first identify context-specific mechanisms and refine the conceptual model, followed by a large-scale survey analysed

This is an Open Access article distributed under the terms of the Creative Commons Attribution CC BY license (<http://creativecommons.org/licenses/by/4.0/>), which permits unrestricted reuse, distribution and reproduction in any medium, provided the original work is properly cited.

(Received 14th May 2026; Accepted 23rd September 2026; Published 18th October 2026)

using Partial Least Squares Structural Equation Modeling (PLS-SEM) to test the proposed relationships (7). A persistent localization gap characterizes Nigeria's FinTech sector: sophisticated global platforms provide technological backbones, yet their transformative potential is constrained by local infrastructure, regulation and socio-cultural practices (8). Architecturally, platforms designed for reliable connectivity may struggle with intermittent networks and reliance on USSD technologies (9). From a governance perspective, global mechanisms encounter Nigeria's hybrid institutional environment, where formal structures such as the Central Bank of Nigeria (CBN) regulatory sandbox, Bank Verification Number (BVN) and Nigeria Inter-Bank Settlement System coexist with extensive informal practices (10, 11). Epistemically, knowledge asymmetries can create one-way value extraction: global platforms possess technical expertise but may lack understanding of local user behavior, while local entrepreneurs may lack the means to translate contextual knowledge into strategic platform inputs (12).

These challenges can reduce market penetration and complementor engagement, increase local firms' development and compliance costs and weaken ecosystem vibrancy, innovation, agility and resilience (13).

The primary research gap addressed by this study is therefore the absence of an integrated and empirically validated explanation of how global technology platforms generate ecosystem performance in institutionally heterogeneous emerging markets. Existing platform ecosystem research insufficiently specifies the mediating mechanisms through which global platform capabilities are converted into locally relevant ecosystem outcomes. the literature provides

limited understanding of when and under what contextual conditions these mechanisms are effective (14). Research on institutional distance establishes that differences between home and host institutional environments can create friction in international operations, while absorptive-capacity research emphasizes the importance of actors' ability to acquire, assimilate, transform and exploit external knowledge (15). the central research problem is the absence of a theoretically grounded and empirically substantiated model explaining which mechanisms enable global-local platform integration, how those mechanisms influence ecosystem performance and how institutional distance and local partner capability condition their effectiveness in an emerging-market context.

Therefore, the objectives of this study are to: identify and empirically validate the mediating mechanisms through which global technology platforms enable ecosystem performance; determine how institutional distance moderates the relationship between integration mechanisms and ecosystem performance and assess how local partner capability moderates these relationships.

Hypothesis Development

Figure 1 presents the conceptual framework guiding this study and illustrates the hypothesized relationships.

Figure 1 shows the conceptual model proposes global technology platforms as the independent variable, architectural modularity, platform governance and knowledge orchestration as mediators, ecosystem performance (vibrancy, effectiveness and agility) as the dependent variable and institutional distance and local partner capability as moderators.

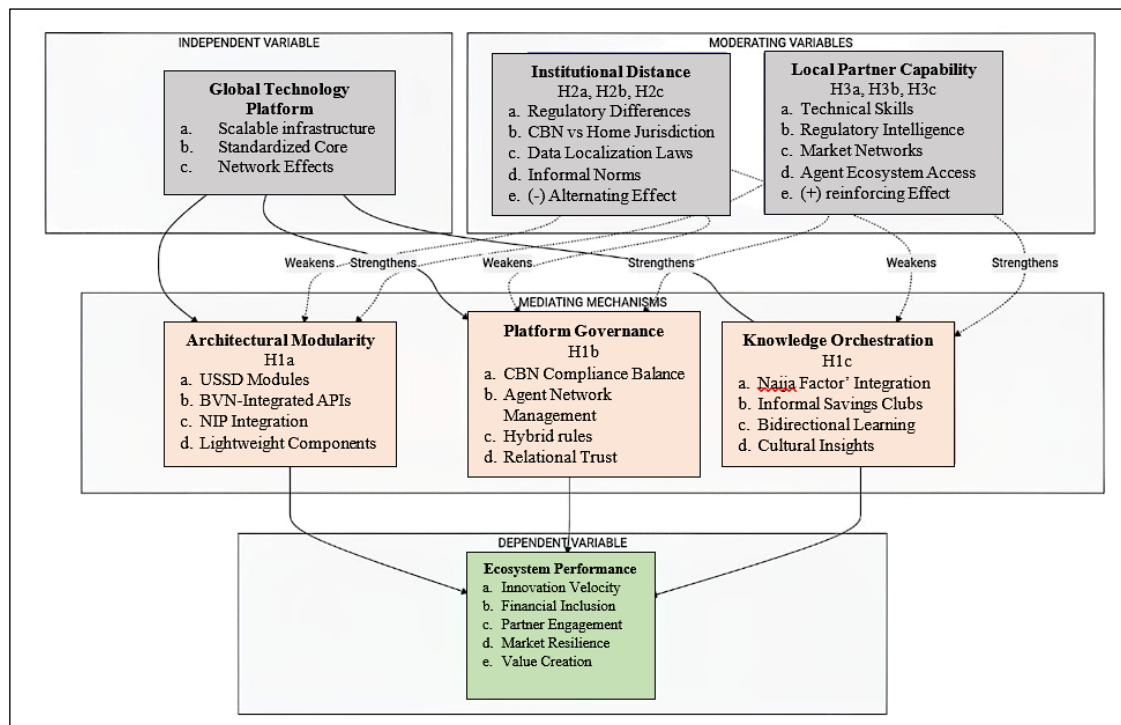


Figure 1: Conceptual Research Model Depicting Mediating and Moderating Relationships

H1: Global technology platforms positively influence Nigerian FinTech ecosystem performance through three integration mechanisms.

H1a: Contextual architectural modularity enhances performance by enabling adaptable components, such as USSD and BVN-integrated APIs, while maintaining platform stability.

H1b: Adaptive platform governance enhances performance by balancing global compliance with flexibility for Nigeria's evolving regulatory and informal environments.

H1c: Culturally embedded knowledge orchestration enhances performance by incorporating local insights, including informal savings practices such as "Ajo" and "Esusu" and the "Naija factor," into platform development.

H2: Institutional distance weakens the relationships between integration mechanisms and ecosystem performance because differences in regulatory, normative and cognitive environments increase adaptation and coordination costs. Thus, H2a predicts weaker effects of architectural modularity, H2b weaker effects of adaptive governance and H2c weaker effects of knowledge orchestration.

H3: Local partner capability strengthens these relationships. Technical expertise, regulatory intelligence and market networks enable partners to adapt modular technologies (H3a), navigate

governance requirements (H3b) and articulate valuable local knowledge (H3c).

The framework integrates three complementary perspectives. Dynamic Capabilities View (DCV) explains how platforms sense opportunities, seize them through adaptive governance and transform architectures through modularity and reconfiguration (16, 17). Absorptive capacity theory explains how knowledge is acquired, assimilated, transformed and exploited through bidirectional knowledge orchestration, while local partner capability strengthens these processes (18, 19). Organizational ambidexterity explains the need to balance global exploitation of standardized infrastructure with local exploration and adaptation. Modularity separates a stable global core from context-specific components, while hybrid governance and knowledge exchange support simultaneous efficiency and experimentation (20, 21).

Nigeria provides an appropriate context because its FinTech ecosystem combines multinational platforms, indigenous firms, telecommunications operators, regulators and informal economic networks (22). Here, USSD-based solutions, adaptive governance and systematic incorporation of local cultural knowledge demonstrate how global capabilities can be translated into locally effective innovation (23, 24).

Methodology

Research Design Representation

This study adopts an exploratory sequential mixed-methods research design (QUAL → QUAN → Integration) to investigate how global technology platforms contribute to ecosystem performance in the Nigerian FinTech sector. The design was selected because the study addresses both an exploratory and an explanatory problem: first, it seeks to uncover context-specific mechanisms through which global platforms are localized within Nigeria's institutional and infrastructural environment; second, it seeks to quantitatively test whether the identified mechanisms mediate the relationship between global technology platforms and ecosystem performance and whether institutional distance and local partner capability condition these relationships.

The research design consists of three sequential but interconnected phases. Phase I (QUAL) involves qualitative exploration through multiple embedded case studies, semi-structured interviews, documentary analysis and observation. This phase identifies the substantive dimensions of architectural modularity, platform governance and knowledge orchestration and examines how institutional distance and local partner capability shape their effectiveness. Phase II (QUAN) translates the qualitative insights into measurable constructs and tests the resulting conceptual model using a structured survey and Partial Least Squares Structural Equation Modeling (PLS-SEM). Phase III (Integration) systematically connects the qualitative and quantitative findings through triangulation, identifying areas of convergence, complementarity and theoretical refinement.

Qualitative Phase

Sample Characteristics

The qualitative phase achieved theoretical saturation through 34 semi-structured interviews conducted between March and August 2024, complemented by documentary analysis of 27 organizational documents and observational data from five industry events. Interview participants comprised: 12 executives from global technology platforms operating in Nigeria (including payment infrastructure providers, cloud service platforms and identity verification firms); 15 founders and senior managers from Nigerian FinTech firms across payments (n=6), digital lending (n=5) and neo banking (n=4) subsectors; 4 regulatory

officials from the Central Bank of Nigeria and Nigeria Inter-Bank Settlement System; and 3 ecosystem conveners from industry associations and development partners. Case organizations represented varying partnership durations (2-10 years) and performance trajectories, enabling cross-case comparison.

Quantitative Phase

Sample Characteristics and Data Screening

The quantitative survey, administered from October 2024 to January 2025 and yielding 327 initial responses, was screened to remove 12 cases with >15% missing data, 8 multivariate outliers via Mahala Nobis distance and 7 straight-lining cases, producing a final analytic sample of 300 well exceeding the minimum required 160 per the inverse square root method. Reflecting the ecosystem's diversity, the sample comprised payments (38%), digital lending (27%), neo banking (18%), Insurtech (10%) and wealth management (7%) firms; firm sizes were early-stage startups (42%), growth-stage (35%) and established enterprises (23%), while respondents included founders/CEOs (41%), CTOs/product leads (33%) and partnership managers (26%), with an average of 1.8 respondents per firm enabling cross-validation. Common method bias assessment raised no significant concern, with Harman's single-factor test explaining only 31.2% of variance (well below the 50% threshold) and the marker variable approach indicating minimal method effects.

Research Setting and Sampling Site

The study was conducted within the Nigerian FinTech ecosystem, with Lagos serving as the principal research and sampling location because of its concentration of FinTech firms, technology platforms, financial institutions, ecosystem conveners and relevant regulatory and industry stakeholders. The approximate geographic coordinates of the primary study area are 6.5244° N, 3.3792° E (Lagos, Nigeria). Given the geographically distributed nature of the Nigerian FinTech ecosystem, interviews, observations and survey responses were not restricted to a single physical site; rather, the coordinates provide a geographic reference point for the principal research setting. Qualitative data were collected from executives, founders, senior managers, regulators and ecosystem conveners, while the quantitative survey captured responses from firms

operating across major FinTech subsectors in Nigeria.

Results

Qualitative Phase Findings

Thematic Analysis Results

Template analysis revealed three overarching themes corresponding to the theorized integration mechanisms, each encompassing distinctive sub-themes that illuminated context-specific manifestations within the Nigerian institutional environment.

Architectural Modularity: Beyond Technical Design

Architectural modularity proved essential not merely as a technical design principle but through what participants called “contextual wrappers” dedicated adaptations that accommodated Nigerian infrastructural and institutional realities while preserving the platform’s core integrity. The first manifestation, infrastructure-agnostic design, demanded more than component separation: successful platforms fundamentally re-architected the behavior of modules to function under unreliable connectivity. As one CTO explained, the USSD module was not a stripped-down app but a complete re-design whose core transaction logic remained identical while its presentation layer assumed network failure, handling session timeouts and asynchronous processing. Similarly, the Bank Verification Number (BVN) emerged as a critical architectural node, where platforms that supplied pre-built, well-documented integration modules ones that inherently managed NIBSS downtime and retry logic dramatically compressed development cycles for local firms, in contrast to those that treated BVN as a trivial API call and ignored the Nigerian verification latency.

Equally critical were offline-first capabilities, wherein modularity had to extend to local storage modules that enabled transactions without constant data connectivity, synchronizing only when a connection returned, thereby preventing the exclusion of users in markets with intermittent access. Finally, regulatory adaptation layers took the form of configurable compliance modules what one executive termed “regulatory configuration files” that could be swiftly modified in response to Central Bank circulars without destabilizing the global transaction engine. Together, these findings extend modularity theory by showing that effective

localization requires not just component decoupling but deliberate behavioral redesign under constraint, along with dedicated, context-specific adaptation modules that safeguard core platform stability while enabling rapid local responsiveness.

Platform Governance: Navigating Institutional Pluralism

Governance findings revealed that effective platforms operated within “institutional pluralism,” simultaneously navigating formal CBN regulations, informal agent network norms and relational expectations. This adaptive governance manifested through regulatory co-creation: rather than unidirectional compliance, successful platforms engaged in constant dialogue with regulators, explaining their technology, understanding policy objectives and jointly shaping compliance pathways. As a platform executive explained, “The sandbox isn’t just for testing products; it’s for testing governance approaches.” For agent networks, governance hybridity combined formal contracts with relational trust recognizing that agents’ community standing and informal problem-solving sustain the ecosystem in ways contracts cannot prescribe. Risk distribution architecture further differentiated platform approaches: partner-oriented platforms provided fraud detection tools, shared intelligence and absorbed some liability, enabling local firms to innovate without being paralyzed by compliance exposure, unlike vendor-oriented platforms that shifted all risk downward.

Critically, governance requirements were not static across the partnership lifecycle. Findings revealed temporal governance adaptation, where an ecosystem convener observed that early-stage relationships demanded flexibility for experimentation and learning, while mature partnerships required stability, consistent rules and predictable enforcement. Platforms that achieved effective integration calibrated governance over time, avoiding uniformly applied static frameworks. Together, these governance insights extend theory by demonstrating that adaptive governance in emerging markets involves proactive participation in rule formation, a blend of contractual and relational mechanisms, equitable risk sharing that fosters partner innovation and lifecycle-sensitive adaptability moving beyond simple flexibility

within existing rules to the co-evolution of governance architecture with the institutional landscape.

Knowledge Orchestration: The "Naija Factor" as Strategic Asset

Knowledge orchestration emerged as perhaps the most critical mediating mechanism, with participants consistently emphasizing that successful global-local integration required systematic processes for capturing and acting upon the "Naija factor" the tacit cultural, behavioral and institutional knowledge indispensable for market relevance. This unfolded through four intertwined practices: formalized local insight capture, wherein platforms instituted dedicated functions like a "Naija Desk" conducting ethnographies that fed directly into product roadmaps, thereby validating call for institutionalizing local knowledge; bidirectional knowledge flows that reversed the assumed one-way transfer, as local partners taught platforms about agent network economics and last-mile trust, with that learning subsequently shaping global strategy; cultural translation mechanisms that transformed raw local observations into globally intelligible product principles, extending absorptive capacity theory by identifying translation as a distinctive organizational capability; and user behavior integration, exemplified by how the Nigerian habit of constant balance checking rooted in managing multiple accounts and transacting on behalf of others inspired globally popular balance-check widgets, demonstrating that local knowledge, when systematically orchestrated, generates global innovation (25).

Moderating Conditions: Institutional Distance and Partner Capability

Qualitative findings revealed that institutional distance and local partner capability profoundly moderated integration effectiveness. Institutional distance operated not as a fixed structural barrier but as a negotiable construct whose impact hinged on platform orientation: as a regulatory official

explained, some platforms arrived dismissing Nigerian regulation as inferior, preserving distance, while those that succeeded sought to understand the policy objectives, historical context and legitimate concerns underpinning CBN's approach, thereby bridging distance. This suggests that the moderating effect of institutional distance is itself moderated by the platform's interpretive posture a nuance absent from extant theory.

Local partner capability, meanwhile, proved multidimensional, extending beyond technical proficiency to encompass what participants termed "translation capability" the capacity to articulate why practices effective in London falter in Lagos, conveyed in language meaningful to global partners, backed by trusted data and linked to valued outcomes. Crucially, capability effects were shaped by complementarity dynamics: a technically brilliant local team paired with a rigid, non-learning platform saw that capability neutralized, whereas a modestly capable team partnering with a platform that offered learning support, technical assistance and strategic guidance could outperform, underscoring that the interaction between partner capacity and platform receptivity matters more than either factor in isolation.

Refined Conceptual Model

Qualitative findings informed several refinements to the conceptual model. First, knowledge orchestration emerged as the most salient mediator, with participants consistently emphasizing its centrality. Second, institutional distance's moderating effect was revealed as contingent upon platform orientation specifically, what participants termed "institutional humility." Third, partner capability encompassed not only technical and regulatory dimensions but also "translation capability" the ability to articulate local insights effectively. These refinements were incorporated into measurement instruments for the quantitative phase.

Table 1: Reflective Construct Reliability and Validity

Construct	Items	Cronbach's α	Composite Reliability	AVE
Architectural Modularity	6	0.847	0.884	0.612
Platform Governance	7	0.862	0.893	0.581
Knowledge Orchestration	8	0.908	0.931	0.673
Institutional Distance	5	0.811	0.842	0.593
Local Partner Capability	6	0.856	0.889	0.604
Ecosystem Performance	7	0.883	0.912	0.638

Note: AVE = Average Variance Extracted.

Quantitative Phase Findings

Assessment of reflective constructs demonstrated satisfactory psychometric properties. Table 1 shows that composite reliability values ranged from 0.842 to 0.931, exceeding the 0.70 threshold

and indicating strong internal consistency. Cronbach's alpha values similarly ranged from 0.811 to 0.908, confirming reliability. Average variance extracted (AVE) values ranged from 0.581 to 0.673, exceeding the 0.50 threshold and establishing convergent validity.

Table 2: Discriminant Validity (Fornell-Larcker Criterion)

Construct	AM	PG	KO	ID	LPC	EP
Architectural Modularity (AM)	0.782					
Platform Governance (PG)	0.453	0.762				
Knowledge Orchestration (KO)	0.512	0.568	0.821			
Institutional Distance (ID)	-0.287	-0.341	-0.398	0.770		
Local Partner Capability (LPC)	0.413	0.467	0.582	-0.231	0.777	
Ecosystem Performance (EP)	0.582	0.613	0.712	-0.421	0.603	0.799

Note: AM = Architectural Modularity, PG = Platform Governance, KO = Knowledge Orchestration, EP = Ecosystem Performance, ID = Institutional Distance, LPC = Local Partner Capability. Diagonal values (bold) are square roots of AVE, off-diagonal values are inter-construct correlations.

Discriminant validity was established through multiple criteria. The Fornell-Larcker criterion revealed that each construct's square root of AVE exceeded its highest correlation with any other construct as shown in Table 2. HTMT ratios were all below the conservative threshold of 0.85, with

the highest ratio (0.79 between knowledge orchestration and ecosystem performance) remaining within acceptable bounds. Cross-loadings confirmed that each indicator loaded most highly on its intended construct.

Table 3: Moderation Analysis Results

Hypothesis	Path	Indirect Effect	95% CI	Direct Effect	VAF	Support
H1a	GTP → AM → EP	0.19	[0.13, 0.25]	0.33	36.5%	Supported
H1b	GTP → PG → EP	0.23	[0.17, 0.29]	0.29	44.2%	Supported
H1c	GTP → KO → EP	0.31	[0.25, 0.37]	0.21	59.6%	Supported

Note: GTP = Global Technology Platform, AM = Architectural Modularity, PG = Platform Governance, KO = Knowledge Orchestration, EP = Ecosystem Performance, $p < 0.001$.

Hypothesis Testing: Mediating Effects (H1)

Table 3 shows the structural model estimation using PLS-SEM with 5,000 bootstrap subsamples revealed significant mediating effects for all three integration mechanisms, providing strong support for H1a, H1b and H1c.

H1a: Architectural Modularity: The indirect effect of global platform utilization on ecosystem performance through architectural modularity was positive and significant ($\beta = 0.19$, $p < 0.001$, 95% CI [0.13, 0.25]). The direct effect remained significant but reduced when the mediator was included (from $\beta = 0.52$ to $\beta = 0.33$), indicating partial mediation. The variance accounted for (VAF) was 36.5%, suggesting that architectural modularity explains approximately one-third of the platform-performance relationship.

H1b: Platform Governance: The indirect effect through platform governance was positive and

significant ($\beta = 0.23$, $p < 0.001$, 95% CI [0.17, 0.29]). The direct effect reduced from $\beta = 0.52$ to $\beta = 0.29$ upon mediator inclusion, with VAF of 44.2%. Platform governance emerged as a stronger mediator than architectural modularity, consistent with qualitative emphasis on governance hybridity. **H1c:** Knowledge Orchestration: The indirect effect through knowledge orchestration was the strongest among the three mediators ($\beta = 0.31$, $p < 0.001$, 95% CI [0.25, 0.37]). The direct effect reduced from $\beta = 0.52$ to $\beta = 0.21$, with VAF of 59.6%, indicating that knowledge orchestration accounts for the majority of the platform-performance relationship. This finding robustly validates qualitative insights regarding the centrality of knowledge processes and the "Naija factor."

Table 4: Moderation Analysis Results

Hypothesis	Interaction Path	Coefficient	95% CI	Support
H2a	AM × ID → EP	-0.14	[-0.22, -0.06]	Supported
H2b	PG × ID → EP	-0.17	[-0.25, -0.09]	Supported
H2c	KO × ID → EP	-0.22	[-0.30, -0.14]	Supported
H3a	AM × LPC → EP	0.18	[0.10, 0.26]	Supported
H3b	PG × LPC → EP	0.21	[0.13, 0.29]	Supported
H3c	KO × LPC → EP	0.26	[0.18, 0.34]	Supported

Note: AM = Architectural Modularity, PG = Platform Governance, KO = Knowledge Orchestration, ID = Institutional Distance, LPC = Local Partner Capability, EP = Ecosystem Performance, $p < 0.01$, $p < 0.001$.

Hypothesis Testing: Moderating Effects (H2 and H3)

Table 4 shows the moderation analysis employed the product indicator approach, with interaction terms created from mean-centered predictor and moderator variables. Institutional Distance Moderation (H2a-c): Results revealed significant negative moderating effects of institutional distance on all three mediated relationships, supporting H2a, H2b and H2c as shown in Table 4. The interaction term for architectural modularity was negative and significant ($\beta = -0.14$, $p < 0.01$), indicating that institutional distance attenuates modularity's positive effect. Simple slope analysis revealed that architectural modularity's effect on ecosystem performance was strong when institutional distance was low ($\beta = 0.48$, $p < 0.001$) but substantially weaker when institutional distance was high ($\beta = 0.19$, $p < 0.05$). Institutional distance's moderating effect was strongest for knowledge orchestration ($\beta = -0.22$, $p < 0.001$), with simple slopes analysis showing that knowledge orchestration's effect declined from $\beta = 0.61$ (low distance) to $\beta = 0.28$ (high distance). This finding aligns with qualitative insights regarding interpretive barriers and the challenge of transmitting tacit knowledge across institutional contexts.

Local Partner Capability Moderation (H3a-c): Results revealed significant positive moderating effects of local partner capability across all three relationships, supporting H3a, H3b and H3c as shown in Table 4. The interaction term for architectural modularity was positive and significant ($\beta = 0.18$, $p < 0.001$). Simple slope analysis demonstrated that modularity's effect strengthened with increasing partner capability: low capability ($\beta = 0.23$, $p < 0.05$), moderate capability ($\beta = 0.41$, $p < 0.001$), high capability ($\beta = 0.59$, $p < 0.001$). Knowledge orchestration again exhibited the strongest moderation effect ($\beta = 0.26$, $p < 0.001$), with simple slopes ranging from $\beta =$

0.31 (low partner capability) to $\beta = 0.68$ (high partner capability). This finding empirically validates qualitative insights regarding partner "translation capability" and the importance of local actors' ability to articulate contextual insights (26).

Robustness Checks

Several robustness checks confirmed the stability of findings. Alternative model specifications, including the inclusion of control variables (firm size, subsector, partnership duration), did not substantially alter path coefficients or significance levels. Endogeneity assessment using the Gaussian copula approach revealed no significant endogeneity concerns for key predictor constructs. Multi-group analysis across subsectors revealed consistent path coefficients, with no significant differences between payments, lending and neo banking firms, supporting the generalizability of findings across the Nigerian FinTech ecosystem.

Integration of Qualitative and Quantitative Findings

Triangulation of qualitative and quantitative findings revealed both convergence and complementarity, strengthening confidence in the overall conclusions.

Convergence: The Centrality of Knowledge Orchestration

Both phases converged on the primacy of knowledge orchestration as the most critical mediating mechanism. Qualitative participants consistently emphasized that systematic capture and integration of the "Naija factor" distinguished successful from struggling ecosystems. Quantitative results confirmed this with the largest indirect effect ($\beta = 0.31$) and the largest variance accounted for (59.6%). The convergence is striking: what practitioners experience as central to success; statistical analysis validates as empirically dominant.

Complementarity: Understanding Moderation Dynamics

Qualitative findings enriched the understanding of quantitative moderation results. The significant negative moderation by institutional distance (H2a-c) was illuminated by participant accounts of "institutional humility" and the negotiability of distance. The strong positive moderation by local partner capability (H3a-c) was given depth through qualitative insights regarding "translation capability" and the importance of articulating local knowledge effectively. The quantitative results establish statistical significance and effect sizes; qualitative findings explain the mechanisms through which these moderating effects operate.

Refinement: The Conditional Nature of Integration Mechanisms

Integration revealed that integration mechanisms are not uniformly effective but operate conditionally. The qualitative finding that institutional distance's effect depends on platform orientation suggests that future research should examine platform-level factors (institutional humility, learning orientation) that may further moderate the moderators. Similarly, the complementarity dynamics revealed qualitatively suggest that partner capability effects may be amplified or attenuated by platform capability a potential higher-order interaction warranting investigation.

Discussion

The study provides robust evidence that global platforms achieve effective integration in Nigeria's FinTech ecosystem through three mediating mechanisms, with knowledge orchestration dominant. Architectural modularity ($\beta = 0.19$, $p < 0.001$) extends beyond design to what participants called "contextual wrappers" infrastructure-agnostic designs, BVN integration handling local quirks, offline-first capabilities and configurable regulatory layers—introducing the concept of resilient modularity for degraded environments (27). Platform governance ($\beta = 0.23$, $p < 0.001$, VAF = 44.2%) operates through regulatory co-creation, agent network hybridity blending formal contracts with relational trust, risk-distribution architectures that foster innovation and lifecycle-sensitive temporal adaptation, challenging unidirectional compliance assumptions by demonstrating institutional entrepreneurship. Knowledge orchestration ($\beta = 0.31$, $p < 0.001$, VAF = 59.6%) proves the

dominant pathway, relying on formalized local insight capture, bidirectional knowledge flows, cultural translation mechanisms and systematic user-behavior integration, establishing translation capability as a distinct organizational competence that extends absorptive capacity theory and anchors a dynamic-capabilities logic of sensing, seizing and transforming (28).

Institutional distance significantly attenuates all mediated relationships, most strongly for knowledge orchestration ($\beta = -0.22$, $p < 0.001$), yet qualitative findings reveal it as a negotiable barrier moderated by institutional humility the willingness to understand local regulatory objectives rather than assume home-country superiority. Local partner capability strengthens all paths, especially knowledge orchestration ($\beta = 0.26$, $p < 0.001$), with effectiveness hinging on partners' "translation capability" and its complementarity with platform learning orientation, not on technical skill alone; thus, partner capacity amplifies but cannot substitute for platform adaptation. The integrated moderated-mediation model explains 68% of variance in ecosystem performance ($R^2 = 0.68$), offering a theoretically grounded framework that specifies how global platforms achieve localized impact under these contingent conditions (29).

Theoretically, the study extends dynamic capabilities to ecosystem orchestration, demonstrates how ambidexterity is distributed across architectural, governance and cognitive mechanisms and reframes institutional distance as interactionally constituted in digital platforms. For global platform owners, the imperative is to prioritize knowledge orchestration via dedicated local insight structures, cultivate translation competence, design for institutional pluralism and approach emerging markets with institutional humility (30). Local FinTech entrepreneurs should invest in translation capability, seek capability-complementarity with platform partners and position themselves as knowledge contributors rather than mere technology recipients (31). Nigerian policymakers can accelerate ecosystem performance and financial inclusion by enabling regulatory co-creation through sandbox mechanisms, supporting partner capability development and formally recognizing informal institutions such as Ajo, Esusu and agent networks, thereby offering evidence-based guidance for navigating

the global–local tension and unlocking platforms' transformative potential for inclusive innovation in emerging economies (32).

Conclusion

This study investigates how global platforms achieve effective integration in Nigeria's FinTech ecosystem to close the persistent localization gap, employing an exploratory sequential mixed-methods design (34 interviews, 27 documents and a 300 response PLS-SEM survey). Findings confirm that architectural modularity, platform governance and knowledge orchestration collectively mediate the platform performance relationship explaining 68% of variance with knowledge orchestration dominating (59.6%) as institutional distance attenuates and local partner capability strengthens these pathways. The study contributes theoretically by extending dynamic capabilities to ecosystem orchestration, introducing translation capability (the competence to render tacit local knowledge globally actionable) and resilient modularity (designs maintaining function under infrastructural constraint), formalizing the practitioner "Naija factor," and showing that institutional distance is negotiable through institutional humility.

Practical Implications and Recommendations

Implications for Global Technology Platform Owners

The strongest implication for global technology platforms is that successful localization should be treated as a strategic capability rather than a peripheral adaptation activity. The significant mediation effects of architectural modularity ($\beta = 0.19$), platform governance ($\beta = 0.23$) and knowledge orchestration ($\beta = 0.31$) demonstrate that platforms achieve stronger ecosystem outcomes when they deliberately invest in mechanisms that connect global capabilities with local realities.

A practical approach would be to establish dedicated Nigeria or "Naija" market insight units that work across product development, regulatory affairs, customer experience, engineering and strategy. These units should not function merely as market-research departments. They should have formal channels for influencing product roadmaps, architecture decisions, risk policies and global innovation priorities.

Implications for Nigerian FinTech Firms and Local Partners

The findings also demonstrate that local firms are not passive recipients of global technology. Their capability significantly strengthens the relationship between integration mechanisms and ecosystem performance. The moderation results show positive interaction effects for architectural modularity ($\beta = 0.18$), platform governance ($\beta = 0.21$) and knowledge orchestration ($\beta = 0.26$).

Nigerian FinTech firms should expand their capability beyond technical expertise and regulatory compliance to include translation capability. This involves the ability to explain local customer behaviour, institutional practices, regulatory expectations and market constraints in ways that global platform owners can convert into technological and strategic decisions.

Implications for Regulators and Policymakers

The findings have important implications for Nigerian policymakers because institutional distance significantly weakened all three integration mechanisms. The negative interaction effects were particularly pronounced for knowledge orchestration ($\beta = -0.22$), suggesting that institutional and interpretive differences can substantially obstruct knowledge exchange between global platforms and Nigerian ecosystem actors.

Regulators should continue developing mechanisms through which technology platforms, FinTech firms and regulators can engage before and during product development rather than only after regulatory problems emerge. Regulatory sandbox mechanisms can be used not simply for product testing but also for governance experimentation and institutional learning.

Implications for Ecosystem Conveners and Industry Associations

Industry associations, development organizations, incubators, accelerators and other ecosystem conveners can play an important intermediary role between global platforms, local firms and regulators.

They should establish structured knowledge-exchange platforms where global and local actors can jointly discuss emerging technologies, regulatory developments, customer behavior, infrastructure challenges and innovation opportunities. Such institutions can reduce information asymmetry

and help translate local knowledge into forms that global technology firms can use.

Limitations of the Study

The study is confined to the Nigerian FinTech ecosystem. Although Nigeria provides a rich context for examining global-local platform integration, its institutional, infrastructural, regulatory and socio-cultural characteristics may differ substantially from those of other emerging economies. Consequently, the findings may not be directly generalizable to FinTech ecosystems in countries such as Kenya, Ghana, South Africa, India, or Indonesia. The quantitative phase relies primarily on cross-sectional survey data collected at a particular period. Although the analysis establishes significant relationships among global technology platforms, integration mechanisms, moderators and ecosystem performance, it cannot fully establish how these relationships evolve over time. Platform governance, institutional distance, partner capability and knowledge orchestration may change as partnerships mature and regulatory environments evolve.

Research Contribution

This study makes three principal contributions to the literature;

First, it makes a theoretical contribution by opening the black box between global technology platforms and ecosystem performance. Rather than treating global platforms as direct determinants of ecosystem outcomes, the study conceptualizes architectural modularity, platform governance and knowledge orchestration as mediating mechanisms through which global platform resources are translated into locally relevant innovation.

Second, the study makes a contextual and contingent contribution by explaining why the effectiveness of global-local integration varies across environments and partners. By incorporating institutional distance and local partner capability as moderators, the study moves beyond a universalistic assumption that platform integration mechanisms operate equally across markets.

Third, the study makes an empirical and methodological contribution by developing and testing an integrated model in the Nigerian FinTech ecosystem using an exploratory sequential mixed-methods design. The qualitative phase uses multiple embedded case studies to

identify and refine context-specific mechanisms, while the subsequent quantitative phase uses Partial Least Squares Structural Equation Modeling (PLS-SEM) to test the proposed mediation and moderation relationships. This design enables the study to combine contextual depth with systematic empirical testing and to ground theoretical propositions in the experiences of ecosystem participants.

Future Scope of the Study

Future research could replicate the model across multiple emerging economies, particularly African markets such as Kenya, Ghana, South Africa and Rwanda. Comparative studies would help determine whether architectural modularity, adaptive governance and knowledge orchestration operate similarly across different institutional environments or whether their effectiveness depends on country-specific conditions. Also, future studies should adopt longitudinal designs to examine how integration mechanisms evolve across different stages of platform-partner relationships. For example, architectural modularity and flexible governance may be particularly important during market entry, while knowledge orchestration and institutional learning may become more important as partnerships mature.

Abbreviations

AM: Architectural Modularity, EP: Ecosystem Performance, ID: Institutional Distance, KO: Knowledge Orchestration, LPC: Local Partner Capability, PG: Platform Governance.

Acknowledgement

All the authors would like to acknowledge respective departments for their support encouragement; we want to thank everyone involved directly or indirectly in making this review possible. We also want to thank all of the research assistants for their fantastic help.

Author Contributions

Onoriode Omorho Humphrey: Conceptualization, Methodology Design, Data Collection Supervision, Data Analysis, Interpretation, Original Draft Preparation, Final Manuscript Review, Ibegbulem Andreas Brutus: Research Design Consultation, Data Validation, Critical Review of Intellectual Content, Manuscript Editing, Olatunji Emmanuel Adekunle: Data Collection Coordination, Literature Review, Manuscript Writing, Asagba Samuel:

Editing, Literature Review, Data Interpretation, Esiti Blankson Governor: Critical Review of Intellectual Content, Interpretation, Analysis of Data.

Conflict of Interest

The authors wish to declare that they have no conflict of interest.

Data Availability

The data supporting the findings of this study are derived from publicly available sources. All relevant data are included within the article and the referenced studies can be accessed through the cited literature.

Declaration of Artificial Intelligence (AI) Assistance

The authors declare this manuscript was prepared with the assistance of generative AI. The authors take full responsibility for the content's originality, interpretation and accuracy.

Ethics Approval

Not Applicable.

Funding

This research received no external funding.

References

1. Autio E. Orchestrating ecosystems: A multi-layered framework. *Innovation, Organization and Management*. 2022;24(1):96–109. <https://doi.org/10.1080/14479338.2021.1919120>
2. Riasanow T, Jäntgen L, Hermes S, Böhm M, Krcmar H. Core, intertwined and ecosystem specific clusters in platform ecosystems: analyzing similarities in the digital transformation of the automotive, blockchain, financial, insurance and IIoT industry. *Electronic Markets*. 2020;31(2021):89–104. <https://doi.org/10.1007/s12525-020-00407-6>
3. Tiwana A. Evolutionary competition in platform ecosystems. *Information Systems Research* 2015;26(2):266–81. <https://doi.org/10.1287/isre.2015.0573>
4. Hein A, Schreieck M, Riasanow T, Setzke D S, Wiesche M, Böhm M, Krcmar H. Digital platform ecosystems. *Electronic Markets*. 2020;30:87–98. <https://doi.org/10.1007/s12525-019-00377-4>
5. Ceccagnoli M, Forman C, Huang P, Wu DJ. Cocreation of value in platform ecosystems: The case of enterprise software. *MIS Quarterly*. 2020;36(1):263–90. <https://doi.org/10.2307/41410417>
6. Tang RW, Buckley PJ. Outward foreign direct investment by emerging market multinationals: The directionality of institutional distance. *Journal of Business Research*. 2022;149:314–326. <https://doi.org/10.1016/j.jbusres.2022.05.047>
7. Gawer A. Digital platforms and ecosystems: Remarks on the dominant organizational forms of the digital age. *Innovation, Organization and Management*. 2022;24(1):110–24. <https://doi.org/10.1080/14479338.2021.1965888>
8. Creswell JW, Clark VLP. *Designing and conducting mixed methods research* (3rd ed.). Sage Publications. 2018. <https://collegepublishing.sagepub.com/products/designing-and-conducting-mixed-methods-research-3-241842>
9. David-West O, Iheanachor N, Kelikume I. A resource-based view of digital financial services (DFS): An exploratory study of Nigerian providers. *Journal of Business Research*. 2018;88: 513–526. <https://doi.org/10.1016/j.jbusres.2018.01.034>
10. Fletcher AJ. Applying critical realism in qualitative research: Methodology meets method. *International Journal of Social Research Methodology*. 2017;20(2):181–94. <https://doi.org/10.1080/13645579.2016.1144401>
11. Costabile C. Digital platform ecosystem governance of private companies: building blocks and a research agenda based on a multidisciplinary, systematic literature review. *Data and Information Management*. 2024;8(1):100053. <https://doi.org/10.1016/j.dim.2023.100053>
12. Adner R. Ecosystem as structure: An actionable construct for strategy. *Journal of Management*. 2017;43(1):39–58. <https://doi.org/10.1177/0149206316678451>
13. Jacobides MG, Cennamo C, Gawer A. Towards a theory of ecosystems. *Strategic Management Journal*. 2018;39(8):2255–76. <https://doi.org/10.1002/smj.2904>
14. Fetters MD, Curry LA, Creswell JW. Achieving integration in mixed methods designs: principles and practices. *Health Services Research*. 2013;48(6pt2):2134–56. <https://doi.org/10.1111/1475-6773.12117>
15. Donnelly R, Purkayastha S, Manolova TS, Edelman LF. Institutional distance, slack resources and foreign market entry. *Journal of International Business Studies*. 2024;55:194–211. <https://doi.org/10.1057/s41267-023-00647-6>
16. Ellström D, Holtström J, Berg E, Josefsson C. Dynamic capabilities for digital transformation. *Journal of Strategy and Management*. 2022;15(2):272–286. <https://doi.org/10.1108/JSMA-04-2021-0089>
17. Teece DJ. Explicating dynamic capabilities: The nature and micro foundations of (sustainable) enterprise performance. *Strategic Management Journal*. 2007;28(13):1319–50. <https://doi.org/10.1002/smj.640>
18. Stelmaszczyk M. How absorptive capacity and organizational learning orientation interact to enable innovation capability? An empirical examination. *Entrepreneurial Business and Economics Review*. 2020;8(1):7–32. <https://doi.org/10.15678/EBER.2020.080101>
19. Helfat CE, Peteraf MA. Managerial cognitive capabilities and the micro foundations of dynamic capabilities. *Strategic Management Journal*. 2015;36(6):831–50. <https://doi.org/10.1002/smj.2247>

20. Cohen WM, Levinthal DA. Absorptive capacity: A new perspective on learning and innovation. *Administrative Science Quarterly*. 1990;35(1):128–52.
<https://doi.org/10.2307/2393553>
21. Mei J, Zheng G, Zhu L. Governance mechanisms implementation in the evolution of digital platforms: a case study of the Internet of Things platform. *R&D Management*. 2021;52(3):498–516.
<https://doi.org/10.1111/radm.12494>
22. Iheanachor N, Umukoro I. Partnerships in digital financial services: an exploratory study of providers in an emerging market. *Journal of Business Research*. 2022;152:425–435.
<https://doi.org/10.1016/j.jbusres.2022.08.010>
23. March JG. Exploration and exploitation in organizational learning. *Organization Science*. 1991;2(1):71–87.
<https://doi.org/10.1287/orsc.2.1.71>
24. Tushman ML, O'Reilly CA. Ambidextrous organizations: Managing evolutionary and revolutionary change. *California Management Review*. 1996;38(4):8–30.
<https://doi.org/10.2307/41165852>
25. Gibson CB, Birkinshaw J. The antecedents, consequences and mediating role of organizational ambidexterity. *Academy of Management Journal*. 2004;47(2):209–26.
<https://doi.org/10.5465/20159573>
26. Raisch S, Birkinshaw J, Probst G, Tushman ML. Organizational ambidexterity: Balancing exploitation and exploration for sustained performance. *Organization Science*. 2009;20(4):685–695.
<https://doi.org/10.1287/orsc.1090.0428>
27. Iheanachor N, Umukoro I, Yela Aránega A. Ecosystem emergence in emerging markets: evidence from the Nigerian digital financial services ecosystem. *Technological Forecasting and Social Change*. 2023;190:122426.
<https://doi.org/10.1016/j.techfore.2023.122426>
28. Kostova T, Beugelsdijk S, Scott WR, *et al.* The construct of institutional distance through the lens of different institutional perspectives: Review, analysis, and recommendations. *Journal of International Business Studies*. 2020;51(4):467–97.
<https://doi.org/10.1057/s41267-019-00294-w>
29. Sarstedt M, Hair JF, Cheah JH, Becker JM, Ringle CM. How to specify, estimate and validate higher-order constructs in PLS-SEM. *Australasian Marketing Journal*. 2019;27(3):197–211.
<https://doi.org/10.1016/j.ausmj.2019.05.003>
30. Jalal-Eddeen S. Algorithmic governance or extortion? Everyday experiences of fintech for loans in Nigeria. *New Political Economy*. 2025;30(2): 254– 266.
<https://doi.org/10.1080/13563467.2024.2418081>
31. Nerbel JF, Kreutzer M. Digital platform ecosystems in flux: from proprietary digital platforms to wide-spanning ecosystems. *Electronic Markets*. 2023;33:6.
<https://doi.org/10.1007/s12525-023-00625-8>
32. Iwedi M. Digital finance infrastructure and growth of commercial banking firms in Nigeria. *Discover Analytics*. 2024;2(16).
<https://doi.org/10.1007/s44257-024-00022-1>

How to Cite: Humphrey OO, Brutus IA, Adekunle OE, Samuel A, Governor EB. Empirical Investigation of Multi-scale Innovation in Nigerian FinTech with Global Platforms. *Int Res J Multidiscip Scope*. 2026;7(4):1241-1253. DOI: 10.47857/irjms.2026.v07i04.012346