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Strategic use of informal networks and operational resilience of logistics firms in Nigeria

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Abstract

The logistics sector in Nigeria is a key to the development of the country, however because of a robust institutional vacuum it has been characterized by infrastructural deficiencies, port congestion, insecurity, and red tape among others. These pressures interfere with operations, especially in cases where small and medium sized enterprises (SMEs) are involved but informal networks are still less researched in terms of strategic response to achieve operations resilience. The proposed qualitative multiple-case study focuses on the strategic use of informal networks by logistics companies in Nigeria and how informal networks affect the operational resilience of the company. The data were collected using an interpretivist approach through semi-structured interviews (25 participants of 12 SMEs in major hubs, i.e., Lagos, Kano, and Port Harcourt), observations, and documents. The results show that there are three types of networks: kinship-based (internal trust and redundancies), community-embedded (collective intelligence and collaboration), and regulatory facilitation (bureaucratic navigation). These enhance resilience capabilities, anticipation, robustness, agility, and adaptation, enabling effective disruption mitigation. However, they are associated with their financial and social costs, the possibility of relationship breakdown, and the existence of the vacuum. The study concludes that informal networks act as essential institutional substitutes and bricolage mechanisms, fostering resilience but hindering long-term sustainability. One such framework connects networks with resilience processes/outcomes and elucidates theory and hybrid strategies. Some implications are conscious network management among practitioners and specific reduction of the void among policymakers.

Keywords: Informal Networks; Operational Resilience; Institutional Voids; Logistics Management; Strategic Bricolage

1. Introduction

The freight and logistics industry in Nigeria is one of the most important economic sectors in the country with an estimated market size of USD 10.95 billion by 2025 and compound annual growth rate (CAGR) of 6.57% by 2030, and the industry is found in the busiest arteries of the most populous country in Africa (Nigeria). Besides enabling the unrestricted movement of goods over expansive urban-rural borders, between the bustling markets of Lagos to the farming frontiers of the north, this dynamic industry supports some of the most important industries, including manufacturing, wholesale trade, and e-commerce and also provides employment to millions of people in formal and informal positions. Hiding behind this promise is landscape complete with operational challenges that are tough to handle: poor road systems plague potholes and flooding, pervasive port congestion at gateways such as Apapa and Tin Can Island that regularly extend transaction times to weeks, deep insecurity due to banditry, kidnaping, and piracy along the main highways, unreliable power supply that forces the use of expensive generators, and red tape that ensures that transactions interchange between agencies (U.S. Department of Commerce, 2024; Nwolozi et al., 2020). Not only do these interconnected problems increase logistics costs, which in Nigeria take up to 1620 percent of product prices, compared to international rates of less than 10 percent, but they also subject companies to disruptions on a regular basis,

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undermining supply chains in an economy that struggles to diversify its economy amid fluctuating oil incomes (Onyenucheya, 2025).

Within these institutional weaknesses, the state-of-the-art resourcefulness of the Nigerian logistics companies is evident, as they skilfully navigate the so-called institutional "voids" which are deep-seated deficiencies of the formal market-supporting institutions, such as enforceable contracts, effective regulatory frameworks, functioning capital markets, and adequate infrastructure that makes traditional Western models of supply chains to be ineffective (Khanna & Palepu, 2010; Boso et al., 2024). In these conditions, the formal institutions tend to fail, typified by non-uniform application of policies, the possibility of corruption, and restricted access to conflict management and funding, forcing businesses to seek other means of survival and development (Mair et al., 2012; Caussat, 2024). In this case, informal networks become a complex, but under-investigated strategic requirement: the relationships webs in terms of kinship, ethnicity, community relationships, religious affiliation, and trust-based partnerships that help firms to bypass bottlenecks, acquire real-time information about roadblocks or security risks, speed up customs clearance by personal relationships, and create redundant ways to routing against unexpected shocks (Oyedijo et al., 2021; Amankwah-Amoah et al., 2023). Instead of simple stopgaps, these networks are bricolage and relational governmental and create agility in hyper-uncertain settings where official systems create prohibitive delays or dangers (Silvestre, 2015; Ojadi & Tickle, 2022). Even though the existing literature helps to understand the gaps in the institutions of new markets and how informal economies may be resilienced through these networks, the empirical evidence of the strategic utilization of such networks in the processes of creating resilience in operations by logistics operators is sparsely visible, particularly in sub-Saharan settings where the majority of markets are governed by small and medium-sized enterprises (SMEs) (Parmigiani & Rivera-Santos, 2015; Kuteyi & Winkler, 2022).

The focal research questions used to question such dynamics in this paper are the following: How can informal networks, including the ethnic trading diasporas, coalitions of vendors, and localised information-sharing enclaves, be strategically used by the Nigerian logistics companies to address institutional voids and operational disjunctures? What are the benefits of these network strategies in enhancing the resilience to operational shocks, the capacity to react to the character of the shock through absorptive, adaptive, and restorative responses (Ambulkar et al., 2015; Pettit et al., 2019). By clarifying these processes, the study aims to better theory on supply chain resilience in void-filled situations, as well as provide benefits at the firm level of strategies and policy responses.

The overarching aim is to illuminate the symbiotic relationship between informal networks and operational resilience in Nigeria's logistics sector, thereby contributing to scholarly discourse on emerging market supply chains and informing stakeholders about cultivating robustness amid persistent institutional deficiencies. The targeted objectives are to (a) define typical informal networks and ways of using them, (b) determine whether it is effective in producing resiliency qualities such as flexibility, redundancy and collaboration, and (c) what moderating variables exist such as size of the company, location and digital enhancement. The scope focuses on SMEs in major hubs Lagos, Kano, Onne, and Port Harcourt, employing qualitative methods to capture nuanced, context-embedded insights; while centred on Nigeria, the findings hold transferable relevance for analogous African economies grappling with comparable voids, though caution is advised when extrapolating to advanced institutional settings.

The following sections are structured in the following way: Theoretical underpinnings on institutional voids (Khanna & Palepu, 2010), informal institutions African business (Meagher, 2010; Amankwah-Amoah et al., 2023), and supply chain resilience frameworks (Ponomarov and Holcomb, 2009; Brandon-Jones et al., 2014) are synthesised, followed by a literature review. A multiple-case study design consisting of semi-structured interviews and thematic analysis is defined in the methodology. The empirical results explain network strategy, results on resilience and anchoring in theory is then discussed. The conclusion summarizes implications, admits limitations and offers future research directions.

2. Literature Review

2.1. Operational Resilience

Operational resilience literature offers a structural basis of how a firm especially in a volatile environment such as the Nigerian logistic industry can continue to thrive under disruptions. The concept of operational resilience is widely understood as the capacity of an organisation to foresee the possible threats, efficiently react to the disruptions, adjust to the new circumstances, and get back on a stable or better state (Ponomarov and Holcomb, 2009; Essuman et al., 2020). This holistic skill is not only in survival but also in proactive and reactive skills, which reduce downtimes and value creation in supply chains. The following critical dimensions of resilience could be taken within the logistics environment where changes and shocks such as a failure in infrastructure, interruption of supply, or security threat are frequent, namely robustness (which makes systems capable of receiving a shock without failure, as a buffer of

redundant inventory or diversified modes of transport), agility (which enables a rapid re-designing of routes or resources to keep the flow going), and adaptability (which gives systems the ability to evolve over time as recurrent uncertainties emerge) (Brandon-Jones et al., 2014; Ambulkar et al., 2015; Pettit et al., 2019). As an example, strong logistics processes may entail hardened warehousing against theft whereas agile practices may include shipment tracking technologies in real-time to reroute shipments in case of port congestion. The empirical studies focus on the fact that each of these dimensions supports each other; stability provides a stable platform of agility, which provides a stable platform of adaptability, which subsequently enhance efficiency and customer satisfaction within chaotic environments (Yu et al., 2019; Lückner et al., 2025). But in emerging markets, where the external shocks are compounded by the systemic vulnerability, operational resilience may need to be combined with contextual factors, including informal processes, to close the gap in the formal support systems.

2.2. Informal Networks and Institutional Theory

Turning to the second theoretical perspective, the institutional theory helps to understand how informal networks can be extremely important as a response to institutional void in the emerging markets, when formal institutions (trustful legal systems, effective markets, and infrastructure) are inadequate (Khanna and Palepu, 2010; Mair et al., 2012). These failures are institutional voids, which force firms to adopt other forms of governance, such as informal networks of social and business relationships, kinship ties, ethnic organizations, and community networks (Meagher, 2010; Amankwah-Amoah et al., 2023; Chipp et al., n.d.). These networks are also performing critical roles in the African setup like that of Nigeria: information sharing on issues of market intelligence or security threats, building trust to reduce risks of transactions opaque environments, and assuming collective solutions to problems such as joint logistics arrangements overcoming bureaucratic barriers or shortages (Oyedijo et al., 2021; Andrews and Luiz, 2024; Pindado et al., 2023). To logistics companies, informal networks can be presented in the form of ethnic trade diaspora arranging cross-border deliveries or a union of traders sharing resources to maintain their fleets, which would replace the missing formal intermediaries (Ojadi and Tickle, 2022; Chipp et al., n.d.). Yet, these networks are not without downsides; they can foster corruption through nepotistic dealings, exacerbate exclusivity by limiting access to outsiders, and perpetuate inefficiencies if reliant on personal favours rather than scalable systems (Pindado et al., 2023; Andrews & Luiz, 2025). The dynamic capabilities theory also clarifies that firms in void-ridden environments, like the Nigerian MNEs, are using sensing, seizing, and reconfiguring capabilities to work with these informal mechanisms to turn them into strategic assets (Caussat, 2024; Andrews and Luiz, 2025). Therefore, informal networks can be used in gaining adaptive benefits in the emerging markets, however, their application requires cautious maneuvering to avoid both ethical and operational threats.

2.3. Synthesis and Research Gap

These lenses are synthesised to expose striking overlaps: informal networks, as responses of the institutions, can literally support the operational resilience by offering the flexibility, redundancy and collaborative spirit required to preempt, absorb, and recuperate logistics chains disruptions (Silvestre, 2015; Parmigiani & Rivera-Santos, 2015; Kuteyi and Winkler, 2022). As an example, the informal logistics industry in Nigeria has networks like associations of the National Union of Road Transport Workers (NURTW) that help operators to share live roadblock or security threats information to improve agility and resilience by enabling collective rerouting or resource pooling in case of disruptions in the infrastructure, like a highway banditry. Likewise, freight-matching, matching shippers with informal truck operators using these networks, takes advantage of the networks, creating redundant supply options to alleviate port congestion by creating alternative supply options based on trust, which formal systems are unable to deliver promptly. The agility benefits of trust-based alliances by providing mutual real-time information on roadblocks, which resembles the resilience aspect of agility, whereas the kinship relationship can form strong redundancies in supplier pools, which address vacuity in formal contracting (Boso et al., 2024; Andrews and Luiz, 2024). Another example is through the emerging economies where informal business networks can assist companies to overcome bureaucracies and gain access to essential resources, as is the case in Nigeria, where ethnic and community connections allow logistics SMEs to seek funding or negotiate customs clearance outside official channels, and thus, reduce recovery times of regulatory delays. These illustrations bring out how informal networks can convert institutional gaps to resilience opportunities as in the foundations of studies where these associations facilitate business development through offering market entry modes and risk alleviation in unstable environments. Nevertheless, the literature is not quite articulate enough in describing all these synergies as resilience is frequently viewed as a formal resource-based construct and informal networks as a improvised coping strategy without delving into their strategic interaction in particular sectors. Significantly, on the one hand, global studies are found to emphasize the enablers of resilience such as technology or diversification (Ivanov et al., 2017; Pettit et al., 2019), whereas on the other hand, the voids are studied in the context of African-driven scholarship in terms of entrepreneurial approaches to the voids (Amankwah-Amoah et al., 2023; Pindado et al., 2023).

3. Methodology

3.1. Research Philosophy and Design

The research philosophy is an interpretivist in the current study, assuming that reality is a construct of society and that the subjectivity of the experience and the meaning of the participants should be considered as the best approach to the complex, context-sensitive phenomena such as informal networks in emerging markets (Creswell and Poth, 2018; Saunders et al., 2019). This is the suitable method to study how logistic companies in Nigeria use informal networks strategically to achieve operational resilience because it is a method of providing subtle clues on the nature of relationships, institutional gaps, and adaptation mechanisms that cannot be easily captured by other methods of analysis (Yin, 2014). Dismissing positivistic beliefs of objective measurability, interpretivism enables an inductive methodology in which theory gets developed based on data, which, by definition, is exploratory (institutional voids and resilience) when less studied, and thus African contexts (Essuman et al., 2020). The method of the research study consists of the multiple case-study design, which allows exploring the diverse logistics companies as limited systems, yet allows drawing comparisons across the cases and finding patterns and contingencies (Eisenhardt, 1989; Stake, 2013). This design was selected as the best compared to single-case or survey designs because it has the capacity to retrieve the richness of context and theoretical replication and attracts instrumental cases to shed light on a larger theoretical construct such as network-embedded resilience (Andrews and Luiz, 2024). The study achieves balance between depth and breadth by combining qualitative data provided by various sources and therefore being reproducible as a result of transparent protocols and yet allows flexibility of interpretation by the researcher.

3.2. Setting and Sample

The study is set in the context of Nigeria logistics industry, which is dynamic but fraught with various changes caused by the acceleration of urbanisation, diversification of the economy after oil dependence, and sustained issues of infrastructural shortages, inconsistent regulations, and security risks that increase institutional voids (Oyedijo et al., 2021; Kuteyi and Winkler, 2022). The major centers such as Lagos with its overcrowded ports where more than three-quarters of national freight pass, Kano as a trade nexus in the north, and Port Harcourt in the oil-rich south, offer a variety of operational environments where informal networks are successful in the face of the failures of formal systems (Ojadi and Tickle, 2022). As the sample size, purposive sampling strategy was chosen as the methods focus on targeting small and medium-sized enterprises (SMEs) predominant in the sector, which is defined according to Nigerian standards as having 10-199 employees and a turnover of less than NGN 500 million to reach the strategic decision-makers that have direct experience in network leveraging (SMEDAN, 2023). This was complemented by snowball sampling in which initial contacts would recommend other informants improving access to inaccessible operators in informal ecosystems (Noy, 2008). Such criteria as five years of operational experience, seniority (e.g., owners, senior managers, operations heads) and the participation of the firm in freight forwarding, trucking, or warehousing were used. The sample size was purposive and consisted of 25 respondents representing 12 companies (eight in Lagos, three in Kano and one in Port Harcourt) and the final sample reached theoretical saturation when no additional themes were discovered (Guest et al., 2006). This is a suitable size, as it is in line with qualitative case study requirements regarding depth of study as opposed to generalisability as SME prevalence in the logistics sector is above 80 proportions of logistics activities are informal or hybrid (World Bank, 2024).

3.3. Data Collection

Semi-structured interviews were selected as the main source of collecting data, and this method was selected due to its flexibility in exploring emergent themes as well as a comparability across cases (Kvale and Brinkmann, 2015). Interviews were 45-90 minutes long and were held in-person or online to address security and logistics limitations, and audio recordings were transcribed word-to-word to be accurate. The interview guide was iteratively constructed using literature themes including institutional voids, types of networks (e.g., kinship, ethnic associations), aspects of resilience (e.g., agility, robustness) and strategic deployment mechanisms, and open-ended questions were used, e.g., How do personal relationships help to overcome port delays. To get abundant stories (Patton, 2015). Additional data would be the field notes of visiting the sites to see the working settings, e.g., informal trucking centers, and secondary data, e.g., firm reports or news articles about the disruption (Yin, 2014). The guide to cultural sensitivity and clarity was refined by a pilot who had three non-sample participants. The data collection period was between six months, i.e., July and December 2025, during the period of ongoing economic reforms so that the real time information on resilience during inflation and supply shocks could be captured (Andrews and Luiz, 2025). By using this multi-method approach, data richness was guaranteed, and the one-source biases were reduced, whereas the effect of dynamic interactions between networks and resilience in Nigerian logistics was measured.

3.4. Data Analysis

The alignment of the meaning and patterns observed in the qualitative data were done through thematic analysis that identifies patterns systematically and with the purpose of answering the research questions (Braun et al., 2006; Nowell et al., 2017). Transcripts were imported into NVivo software for organisation, enabling rigorous coding and memoing to track analytical decisions (Bazeley & Jackson, 2013). The process unfolded in phases: initial familiarisation through repeated readings; generation of descriptive codes (e.g., "kinship ties for credit access"); development of interpretive codes grouping similar ideas (e.g., "network functions in void-filling"); and refinement into analytic themes (e.g., "strategic bricolage for agility"). Cross-case synthesis involved comparing themes across the firms and matrices were used to visualise variations between locations or size with constant comparison allowing grounded emergence of concepts (Charmaz, 2014). The credibility was also improved by means of member checking where members were provided with summaries to verify it with them and peer debriefing with peers to question interpretations (Lincoln & Guba, 1985). Such inductive-deductive hybrid, enabled themes to inform theory, e.g. by filling in institutional theory with results of resilience, and countered researcher bias by reflexive journaling.

3.5. Ethical Considerations and Limitations

Ethical procedures were strictly adhered to, and these procedures were based on such principles as respect, beneficence, and justice (Belmont Report, 1979; Creswell & Poth, 2018). The informed consent was obtained using detailed information sheets and verbal explanations that ensured that the participants had a clear understanding of what it meant by voluntary participation, risks involved (e.g. discussing sensitive networks) and their rights to go. Confidentiality was maintained through anonymization using pseudonyms for firms and individuals and secure data storage on encrypted servers, with access limited to the research team. Reflexivity was practised via ongoing reflection on the researcher's positionality as an outsider to Nigerian logistics, mitigating potential cultural biases through local collaborator input (Berger, 2015). There were no incentives given to deter coercion and institutional ethics boards were consulted to approve. Although these are taken, there are still constraints: the qualitative design restricts the ability to make a generalisation outside of the Nigerian SMEs and large firms or other African contexts could be overlooked (Yin, 2014). The biases of self-reporting can exaggerate the positive aspects of networks and minimise negative aspects such as corruption, but triangulation minimised this (Podsakoff et al., 2003). Temporal specificity may be the result of the post-COVID-19 condition and the economic uncertainty at the time of data collection. The longitudinal or mixed-methods designs in the future research could include broader validation.

4. Findings/ Analysis

4.1. Typology of Strategic Informal Networks Used

Thematic analysis of the interview transcripts revealed three main informal networks that were strategically used by the logistics SMEs in Nigeria to fill the institutional voids, i.e., kinship-based, community-based (union and ethnic associations), and regulatory facilitation networks. Kinship networks, grounded in familial and ethnic affiliations, were extensively used to cultivate trust and ensure workforce reliability in a high-risk environment characterised by thefts, defections, and weak formal enforcement mechanisms (Meagher, 2010; Oyedijo et al., 2021). Participants frequently discussed prioritising family or village recruits for driving and loading roles on hazardous routes. A Lagos-based trucking firm owner articulated this: "We mostly employ from our village or extended family; blood ties mean they won't run away with the load when bandits strike up north; strangers might disappear at the first sign of trouble." This practice aligns with historical patterns of ethnic solidarity in Nigerian informal economies by substituting deficient labour contracts. Community-embedded networks, encompassing ethnic associations, religious groups, and entities like the National Union of Road Transport Workers (NURTW), enable collective resource access and localised coordination (Ojadi & Tickle, 2022). In northern hubs such as Kano, operators leveraged Hausa community or union ties for vehicle pooling and fuel sharing, as one manager explained: "Our Hausa community group coordinates loads; if one truck breaks down, others help without charging extra; it's about survival together." Facilitation networks are regulatory networks that are founded on individually-targeted contacts to officials to surmount the barriers of bureaucracy. Port-centric firms in Lagos and Port Harcourt highlighted "agent" intermediaries with customs links, exemplified by a freight forwarder's account: "Without my brother's connection in the agency, containers sit for months; one phone call, and it's released the same week. We all know the 'facilitation' makes it move." Cross-case comparisons revealed regional variations: kinship prevailed in family-operated entities, community/union ties in northern operations, and facilitation networks at southern ports, illustrating deliberate, context-specific strategising rather than opportunistic reliance (Kuteyi & Winkler, 2022).

4.2. Networks for Anticipation and Robustness

Informal networks significantly contributed to anticipatory capabilities and robustness, furnishing early warnings and redundant resources in an ecosystem where formal monitoring and infrastructure are deficient (Amankwah-Amoah et al., 2023; Essuman et al., 2020). Decentralised intelligence was through community and union associations especially in security hazards such as highway banditry. Northern participants relied on NURTW-related or ethnic WhatsApp groups to be alerted in time, one Kano operator saying, before we go to Sokoto, we check the Fulani drivers' group, there was talk of ambush, we pass on the bypass, or have a detour. Last month it rescued three trucks that had been attacked. This collective guard adopts an absorptive strength through shared redundancies, such as convoy escort or a second driver (Brandon-Jones et al., 2014). The kinship networks increased financial and logistical space; during slack time or shortages, kinship provided informal credit or cross-border options. An example of a southern respondent: "A participant in the south described it: When the port was congested and held our goods, my uncle Benin would unofficially take the trucks across the border; family has kept the business alive when banks would not lend in any way. The continuity in procedure was achieved through regulatory contacts to reduce cascading failures because of bureaucratic volatility. The urban companies that had diversified networks displayed a higher level of anticipation than their rural equivalent that needed to use smaller kinship networks, highlighting the importance of network density in the construction of systemic resilience in the presence of constant voids (Silvestre, 2015).

4.3. Networks for Agile Response and Adaptation

Agile responses and adaptive evolution were based on networks, enabling improvisational problem-solving and reconfigure, in case of a disruption (Pettit et al., 2019; Andrews and Luiz, 2025). During such incidents of insecurity, community alliances allowed quick rerouting during emergencies. The interviewees in the North attributed other routes to NURTW networks: When roads are blocked, the NURTW network leads to bush routes or convoy. Call to our association brother last week landed us safe through with armed locals. The regulatory facilitation speeded up the solution of ports and turned backlashes into the speedy final results. A Lagos forwarder recounted: "Was the container seized due to paperwork?" My customary contact has it fixed, with a set-off; when it comes to formality, months are wasted, but through the network a matter is accomplished quickly. Adaptive hybridisation was driven by kinship, in which traditional relationships were complemented by new tools; post-hijacking experiences encouraged coordinated scouting by families, which integrates old trusted relationships with new technology as one of the owners remarked: "After a series of hijackings, we learnt to adapt, cousins now scouted routes themselves, understanding how old relationships serve as a new technology. Companies that had multilayered networks exhibited greater agility, quickly resuming their operations and transforming their practices and extending the resilience theory to the informal governance of emerging markets (Ambulkar et al., 2015; Pindado et al., 2023).

4.4. The Dual-Edged Sword: Resilience Trade-offs and Risks

Even though instrumental to resilience, informal networks came at the cost of a considerable number of trade-offs and risks, which may have continued to maintain vulnerabilities and inefficiencies (Caussat, 2024; Boso et al., 2024). Facilitation fees had a direct financial impact, which ranged and increased prices in corrupt interfaces. One of the Port Harcourt respondents agreed that they have to pay something to receive faster so that it is 15-20 percent more per container, yet without it, nothing occurs; it devours the profits, but keeps us going. There were social consequences of nepotism and conflict of relationship; the over-dependence of kinship resulted in poor hiring, as one manager said: Hiring relatives is a bad idea; bad drivers remain in the business since they are family, which harmed the business in the long-run. Networks also perpetuated the systemic gaps by by-passing reforms: "We are solving problems off the record, and no one ever repairs roads or ports in Lagos, we all complain but we need contacts, so the government never gets involved," said one Lagos operator. Relational vulnerability revealed companies' sudden shocks at the point of contact loss, whereas exclusivity increased inequalities and ethical crises, such as institutionalized corruption (Mair et al., 2012; Parmigiani and Rivera-Santos, 2015). Respondents suggested digital-formal hybridisation as the means of mitigating risks to confirm the importance but precariousness of networks in the context of voids (Andrews and Luiz, 2024).

5. Discussion

5.1. Interpretation of Findings

The results of the current research shed light on how Nigerian logistics companies are engaging in strategic implementation of informal networks as a complex form of institutional work and bricolage, which helps them to deal with the institutional voids that are prevalent in their business space and restructure them to some extent. The conceptualisation of institutional work as put forward by Lawrence and Suddaby (2006) is an intentional effort by

actors to create, sustain or disrupt institutions; in this case logistics operators are involved in the creation of work; by establishing other forms of relations, like kinship ties and community alliances to replace inadequate formal institutions, like effective regulation enforcement or infrastructure. Indeed, the typology of networks discovered (trust-building: kinship, community: resource sharing, regulatory facilitation: bureaucratic navigation) has been intentional in imbuing resiliency into routine activities, and converting gaps into agency opportunities. In a similar vein, these practices reflect bricolage which refers to making do with what one has through recombination and improvisation (Baker and Nelson, 2005; Di Domenico et al, 2010). The application of WhatsApp groups security warnings or family credit lines by the Nigerian companies during disruptions is an example of bricolage at work, where the limited formal resources are adapted relationally to predict and absorb shocks, which fits within the emerging market literature that bricolage leads to innovation under constrained conditions (Senyard et al., 2014; Busch and Barkema, 2022). This meaning highlights the fact that informal networks are not survival measures but strategic institutional of operational resilience that bridges state gaps of weak governance or lack of infrastructures to sustain supply chains in unstable environments.

5.2. Theoretical Integration

Integrating these results with extant literature reveals both extensions and refinements to theories of supply chain resilience and informal networks in emerging economies. Recent resilience models, such as those developed by Ponomarov and Holcomb (2009), focus on formal enablers such as technology or diversification, whereas our results go further to illustrate how the informal processes form the foundation of resilience dimensions: anticipation using early warnings, robustness through redundancies, agility in response, and adaptation through learning institutional void contexts (Essuman et al., 2020; Lücker et al., 2025). This study contrasts with global studies that often overlook the relational governance prevalent in Africa, where formal systems are supplanted by trust-based networks (Amankwah-Amoah et al., 2023). Our findings can be used to refreeze institutional theory: voids are not always debilitating, but their magnitude determines network strategies, as postulated by Boso et al. (2024), and such intermediate strategies as digital-informal integration in Nigeria firms do not fulfill assumptions of pure informality being inefficient (Meagher, 2010). Nevertheless, the two-sidedness of networks that provide resilience at the cost of expenditures and create gaps is in line with criticism of informal economies that support systemic inequalities (Mair et al., 2012). This paper thereby narrows down the bricolage theory to African logistics, and the importance of bricolage in frugal innovation in crisis although over-romanticized as is the case with the formalisation argument.

5.3. Conceptual Contribution: Enhanced Framework

Theoretically, this study adds a new framework as modeling informal network types and resilience capabilities and outcomes including trade-offs, moderators and feedbacks to inform future theorising and practice emerging market supply chains. The model assumes a dynamic process: alternative types of networks have varying strengths in facilitating particular resilience benefits, which come together in order to generate operational resilience results, through contextual influences and mediated by underlying risks. Anticipation and robustness (e.g. internal buffers and family intelligence), community embedded networks (e.g. collective rerouting through unions), and regulatory facilitation networks (e.g. post-disruption reconfigurations through bureaucratic shortcuts) are mostly driven by the kinship networks. The desired consequences of such capabilities include continuity and ability to evolve, yet they are always associated with trade-offs, including financial expenses and getting trap by a void (Caussat, 2024). The strength of pathways is driven by moderators such as void severity and digital augmentation, and networks are also able to develop through resilience experiences due to dashed feedback loops that capture iterative bricolage and institutional work (Busch and Barkema, 2022; Silvestre, 2015). This advanced framework adds to the previous turbulence-voids models by centring African informal, which contributes to the diagnostic tool so as to improve the sustainability of resilience by the managers and the policymakers by establishing a hybrid formal-informal system.

6. Conclusion

6.1. Summary of Answers to Research Questions

This study directly addressed its core research questions through empirical evidence from Nigerian logistics SMEs. Nigerian businesses use informal networks in planned, context-specific ways. For example, they use kinship-based networks to build trust, reliability, and financial buffers; community-embedded networks (like ethnic associations and transport unions) to share information and resources; and regulatory facilitation networks to accelerate bureaucratic processes. These networks have significant consequences on operational resilience in that they selectively enable some of the key capabilities: kinship and community links mostly contribute to anticipation (early warnings) and robustness (redundancies), community bonds contribute to agile responses (rapid rerouting and collaboration), and facilitation networks contribute to formation of adaptations in response to disruptions (post-disruption reconfiguration and

learning). The net result is increased resilience that manifests itself as reduced downtime, increased shock stability, and evolutionary fitness. Nonetheless, this resilience is accompanied by trade-offs such as financial expenditures, ethical risks, relational instability, and the continued existence of institutional voids, highlighting the dichotomous, two-sided nature of the existence of informal mechanisms in environments dominated by voids.

6.2. Contributions to Knowledge

The study contributes to scholarly work in various ways. Theoretically, it pushes the supply chain resilience models that conventionally emphasize formal resources and lay emphasis on informal relational governance as a key facilitator in the new markets and refines institutional void theory to emphasize voids as locus of agency by bricolage and institutional work. The theoretical framework that connects network typologies to resilience capabilities, outcomes and trade-offs provides a new, testable midrange model that has explanatory utility on African and other like contexts. It empirically addresses a critical gap by rich qualitative evidence on an under-researched sector, one of the first studies of strategic use of informal network to achieve resilience in sub-Saharan African logistics on firm level. In practice, it entails providing managers and policymakers with insider knowledge to build supply chains in unstable institutional environments and leave the anecdotal acknowledgment of the informality behind and adopt evidence-based approaches.

6.3. Implications for Practice

The implications of the findings to the logistics managers of Nigeria, and other similar emerging markets, include the need to stop relying passively on informal networks and adopt an active, portfolio-based approach in managing the informal networks. Companies need to map and diversify their network resources in an orderly way, building a stronger core by strengthening kinship relationships and broadening community and digital-enhanced relationships to increase scope and minimize susceptibility to exclusivity or delicateness. The benefits can be enhanced and the downsides reduced by proactive governance mechanisms (i.e. internal codes of conduct in order to stay in the level of nepotism and corruption risk) and investment in hybrid tools (i.e. WhatsApp groups developing into formalised apps). Networks should be regarded by forward-looking managers as strategic assets that are to be nurtured, audited and slowly formalised to be scalable ensuring their firms are not only able to survive disruptions but achieve competitive advantage through their greater agility and adaptability in uncertain environments.

6.4. Implications for Policy

Policymakers in Nigeria and across Africa stand to gain substantially by recognising informal networks as proven resilience enablers rather than mere symptoms of underdevelopment. Instead of engaging in aggressive formalisation potentially resulting in the dismantling of efficient systems, leaders will need to embrace a hybrid solution: they need to focus on eliminating the least desirable institutional voids that spur overreliance on networks by making long-term investments in infrastructure, digital connectivity, security, and streamlining of regulations. The benefits of resilience would be scaled by selective incorporation of effective informal approaches, including making community early warning systems formal on national platforms or collaborating with transport unions to resolve disputes on a sector-wide basis. Proactive policy must encourage dialogue between the public and the private to jointly design interventions that maintain benefits of trust at increasing reduced facilitation requirements, ultimately moving towards more open, inclusive logistics ecosystems that facilitate sustainable economic growth and regional integration, such as the African Continental Free Trade Area (AfCFTA).

6.5. Limitations and Directions for Future Research

As with all qualitative enquiries, this study has limitations that bound its contributions. The multiple-case design prioritises contextual depth over statistical generalisability, restricting applicability beyond the sampled SMEs in major Nigerian hubs; patterns among large firms, microoperators, or remote regions may differ. Self-reported information also creates the risk of desirability bias particularly among sensitive facilitation practices, though efforts are taken to counter this. The snapshot of cross-sectional dynamics depicts dynamics at certain economic conditions, which may be absent in longitudinal dynamics. Longitudinal designs should be conducted in future studies to monitor network evolution throughout a policy change or a technological disturbance to provide causal information about resilience pathways. Quantitative analyses based on social network analysis and objective performance (e.g., days of downtime, cost variances) could confirm the framework and its extension and assess the effects of network strength and resilience. The model would be robust and would be tested by comparative cross-country studies in Africa, comparing Nigeria to more formalised settings, such as Kenya or Rwanda, and would indicate contextual moderators. Multi-method strategies that combine big data of digital platforms might also shed more light on the pathways of hybridisation to enable evidence-based interventions that apply informal ingenuity to a wider developmental outcome.

In conclusion, this study demonstrates that informal networks are essential strategic assets for operational resilience in Nigeria's logistics sector, converting institutional limitations into sources of flexibility. As an omen of things to come, the insights chart clear a path into hybrid systems that combine informal trust with formal efficiency, which provides blueprint to not only the Nigerian supply chains but also to emerging economies across the world in search of robust, inclusive growth an era of escalating disruptions.

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