MAAUN INTERNATIONAL JOURNAL OF POST GRADUATE STUDIES (MIJPS)
IAHERI
INSTITUTE OF AFRICA HIGHER EDUCATION RESEARCH AND INNOVATION
Maryam Abacha American University of Niger
Volume 3, Number 1, October, 2026
https://iaherijournal.maaun.edu.ng
ISSN (Paper): 2817-1673; ISSN (Online): 2817-1683



# Strategic Flexibility as a Moderator of the Relationship Between Boko Haram Insurgency and SME Performance in Adamawa State, Nigeria

**Zubairu, U., Saidu, M. M. & Ibrahim, A.[1]**
Corresponding Author: uz.bello@googlemail.com

[1]School of Social and Management Sciences, Maryam Abacha American University of Niger, Maradi, Niger Republic.

## Abstract
Small and Medium Enterprises (SMEs) are vital for employment and economic growth in Nigeria, yet their performance in Adamawa State remains threatened by the Boko Haram insurgency. Despite extensive literature on conflict and business failure, there is little empirical evidence on whether internal strategic capabilities can buffer insurgency-induced operational stressors, particularly in the Northern Zone comprising Madagali, Michika, Mubi North, Mubi South and Maiha Local Government Areas. This article examines the moderating effect of strategic flexibility on the relationship between four insurgency proxies (business displacement, operational hour restrictions and curfews, supply chain disruption, and workforce shortage) and SME performance. The study adopted a pragmatist philosophy and a cross-sectional explanatory quantitative design. From a population of 300 registered SMEs, a near-census of 297 firms was surveyed (99% response rate) through structured questionnaires administered face to face, and 293 cases were analysed after outlier screening. Data were analysed using Partial Least Squares Structural Equation Modelling (SmartPLS 4.0) with 5,000 bootstrap resamples. The model explained 77.9% of the variance in SME performance ($R^2 = 0.779$). Strategic flexibility had a strong positive direct effect on performance ($\beta = 0.542$, $p < 0.001$, $f^2 = 0.434$). It significantly moderated the displacement–performance relationship ($\beta = -0.105$, $p = 0.042$) and the curfew–performance relationship ($\beta = 0.173$, $p = 0.018$), but did not moderate the supply chain ($\beta = -0.027$, $p = 0.638$) or workforce ($\beta = -0.029$, $p = 0.656$) relationships. The article concludes that strategic flexibility is a critical contingency capability for SMEs in conflict zones, effective in respect of displacement and curfew constraints but insufficient on its own against severe supply chain and workforce disruption, which require institutional intervention.

**Keywords:** Strategic flexibility; Boko Haram insurgency; SME performance; conflict-affected SMEs; dynamic capabilities; moderation; Adamawa State.

## Introduction
As SMEs increasingly operate in turbulent environments shaped by systemic shocks, geopolitical tension and socio-political violence, scholars have turned from static models of resource orchestration towards capabilities that let firms pivot quickly under hostility. Among these, strategic flexibility, a firm's capacity to realign resources, modify operational processes and exploit emergent opportunities, has emerged as a key internal buffer (Pathak et al., 2024; Sanchez, 1995; Zhou & Wu, 2010). The need is acute in Nigeria. SMEs make up about 96% of established businesses and over 48% of GDP (SMEDAN & NBS, 2021), yet the Boko Haram insurgency, escalating since 2009, has displaced over 2.5 million people and caused losses above $9 billion in

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the North-East (World Bank, 2022). In Adamawa's Northern Senatorial Zone, the insurgency affects SMEs through four proxies: forced displacement and relocation; curfews and operational hour restrictions; supply chain and logistics disruption; and workforce shortage and absenteeism (Asogwa et al., 2022; Abubakar et al., 2023). Strategic flexibility has a concrete meaning in this setting: switching suppliers when routes close, moving to mobile or digital transactions during curfews, relocating core functions temporarily, and cross-training remaining staff to cover absentees (Inuwa & Muhammad, 2019). The damage the insurgency does to SMEs is well documented (Foyou et al., 2018; Asogwa et al., 2022; Abubakar et al., 2023), with 72% of small businesses in Adamawa reported to have lost productive assets without compensation (IPC, 2023). Studies of flexibility as a moderator exist, but they concern economic crisis, market turbulence or product competition, not violent conflict (Herhausen et al., 2020; Zhou & Wu, 2010; Sanchez, 1995). Studies of curfews, logistics and relocation in Adamawa, in turn, do not test moderating capabilities (Inuwa & Muhammad, 2019; Abubakar et al., 2023). No known study tests strategic flexibility as a moderator across four insurgency proxies in the Northern Zone. The central question is therefore: To what extent does strategic flexibility moderate the relationship between Boko Haram insurgency proxies and SME performance in Northern Adamawa? The aim is to examine the moderating effect of strategic flexibility on the relationship between Boko Haram insurgency and SME performance in the Northern Zone of Adamawa State. The specific objectives are to determine the moderating effect of strategic flexibility on the relationship between SME performance and Business displacement and forced relocation; Operational hour restrictions and curfews; Supply chain and logistics disruption and Workforce shortage and employee absenteeism. The article also reports the direct effect of strategic flexibility on SME performance.

Theoretically, the study extends dynamic capabilities theory to non-market, security-driven shocks, adds to the nomological network of strategic flexibility beyond the product-market setting in which Sanchez (1995) developed it, and specifies conditions under which flexibility helps, consistent with contingency theory (Donaldson, 2001). Practically, it tells owner-managers where flexibility pays off and where it does not, helps development agencies design targeted rather than generic resilience training, and offers lenders a basis for flexibility-based appraisal. For policymakers it clarifies which problems firm-level capability can address and which need public action.

Sanchez (1995) decomposes strategic flexibility into resource flexibility (the adaptability of assets and tools to alternative uses) and coordination flexibility (the speed with which managers reconfigure resources). Zhou and Wu (2010) place it within dynamic capabilities, focusing on reconfiguration speed and resource fungibility. Here it is measured through behaviours such as switching and backing up suppliers, redeploying and cross-training staff, relocating core operations temporarily, shifting to mobile and digital transactions, changing the product mix, and reallocating finance quickly (Zhou & Wu, 2010; Pathak et al., 2024). Flexibility should be distinguished from resilience: resilience emphasises recovery to a prior state, whereas flexibility emphasises pivoting to new configurations, which matters where the pre-insurgency environment may never return (Duchek, 2020; Pathak et al., 2024). Herhausen et al. (2020) meta-analyse 98 studies and conclude that flexibility moderates the environment–performance relationship, more strongly under high turbulence and for SMEs than for large firms. Pathak et al. (2024) report that flexibility moderated the crisis–resilience link among SMEs in conflict-affected South Asian contexts, with resource flexibility mattering more than coordination flexibility. Maalouf et al.

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(2025) find that flexibility distinguished surviving from failed SMEs in Beirut, and that capabilities developed before the crisis worked better than those improvised during it. Malik and Terzidis (2025) and Boso et al. (2024) report similar buffering across crisis types and institutional voids. Most of this evidence concerns non-insurgency crises, and its descriptions should be checked against the original sources before citation in a final manuscript.

Abdulazeez et al. (2025), Inuwa and Muhammad (2021) and Eze et al. (2024) report that firms with mobile business models, digital customer relationships or modular assets suffered smaller displacement losses and recovered faster, mainly through customer retention, cost mitigation and rapid re-establishment (Okoro & Eze, 2023). Flexible firms can shift to mobile and digital transactions and delivery services during restricted hours (Inuwa & Muhammad, 2019), although direct moderation tests are scarce. Asogwa et al. (2022) report that firms sourcing from three or more suppliers across regions suffered smaller profit reductions. Yet Abubakar et al. (2023) document 210% transport cost increases driven by occupied highways, destroyed bridges and extortion, constraints that firm behaviour may not overcome. Abdulazeez et al. (2025) report smaller absenteeism-related profit losses where cross-training coverage was high, but Eze et al. (2024) describe psychological trauma and skills flight that cross-training may not repair.

The evidence supports flexibility as a buffer in general and for displacement in particular, but offers little on curfews, supply chains and workforce, and almost none that tests all four within one model for the Northern Zone. This study fills that gap. Dynamic capabilities theory is the primary lens. It holds that firms sustain performance in changing environments by sensing threats, seizing opportunities and transforming the resource base (Teece et al., 1997; Teece, 2007, 2018). In an insurgency, sensing means detecting security threats, seizing means rapid operational pivots, and transforming means business model reconfiguration. Contingency theory is the secondary lens: no strategy is universally best, and the value of a capability depends on environmental fit (Lawrence & Lorsch, 1967; Donaldson, 2001), which justifies specifying flexibility as a moderator rather than only an antecedent. The Resource-Based View (Barney, 1991) serves as a contrast because it focuses on possessing valuable resources, which insurgency can destroy, and resilience theory is used for the bounce-back versus bounce-forward distinction noted above.

## Methodology

The study adopted pragmatism (Morgan, 2014; Saunders et al., 2019) and a cross-sectional explanatory quantitative design, appropriate for estimating moderation in conflict settings where longitudinal fieldwork was unsafe and attrition from closure and displacement (over 40%) would have been severe. The population was registered small (10–49 employees) and medium (50–199) enterprises in the five LGAs that had operated at least 12 months from fixed premises. A frame of 300 firms was constructed by triangulating SMEDAN/NBS data, Corporate Affairs Commission records and trade association rosters, because official records were destroyed during the insurgency. A purposive near-census approach yielded 297 responses (99.0%): Madagali 41/42, Michika 58/58, Mubi North 111/112, Mubi South 53/54 and Maiha 34/34. A sample of this size offers adequate power to detect interaction effects, which are hard to detect in non-experimental data (Aguinis et al., 2005; Hair et al., 2019). A structured questionnaire measured the four proxies, strategic flexibility, SME performance (sales growth, profitability, customer retention and asset preservation, relative to the preceding 12 months) and controls on five-point scales. Strategic flexibility items were adapted from Zhou and Wu (2010) and Pathak et al. (2024).

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Five experts reviewed the instrument using Lawshe's (1975) Content Validity Ratio, and a pilot of 30 excluded SMEs refined item wording. Exploratory factor analysis supported the structure (KMO = 0.874), and Harman's single-factor test showed 28.6% variance on one factor, below the 50% threshold (Podsakoff et al., 2003). SmartPLS 4.0 was used in two stages (Hair et al., 2017, 2019). The moderating effect was tested with the product-indicator approach, and significance was assessed with 5,000 bootstrap resamples at $p < 0.05$. Four multivariate outliers were removed (Mahalanobis $D^2 > 29.59$), leaving 293 cases. VIF values were below 3.45 and the Durbin–Watson statistic was 1.87.

## Results

Strategic flexibility averaged 3.79 (SD = 0.84), indicating moderate flexibility with considerable variation between firms. SME performance averaged 3.76 (SD = 0.85). Exposure to the four proxies averaged between 3.61 (displacement) and 3.78 (workforce shortage). Cronbach's alpha was 0.882 for strategic flexibility and 0.912 for performance; composite reliability (ρc) was 0.909 and 0.926; AVE was 0.587 and 0.558. Strategic flexibility indicator loadings ranged from 0.715 to 0.829. Among the proxies, alpha ranged from 0.763 to 0.849 and AVE from 0.517 to 0.623. Discriminant validity between the insurgency proxies was only partly established (displacement–curfew correlation 0.782 exceeding the displacement AVE root of 0.719; HTMT for curfews–displacement 0.891, curfews–performance 0.884, and flexibility–curfews 0.850), which is a caveat for the curfew interaction in particular.

The model explained 77.9% of the variance in SME performance ($R^2 = 0.779$; adjusted $R^2 = 0.772$), with predictive relevance ($Q^2 = 0.749$) and acceptable fit (SRMR = 0.065). Strategic flexibility had a large direct effect on performance ($\beta = 0.542$, $t = 9.148$, $p < 0.001$, $f^2 = 0.434$). The direct effects of the proxies were small and positive for displacement ($\beta = 0.128$, $p = 0.016$) and curfews ($\beta = 0.174$, $p = 0.010$) and non-significant for supply chain ($\beta = 0.060$) and workforce ($\beta = 0.091$), as reported in the companion article.

The 99.0 per cent response rate is substantially higher than the typical response rate for SME surveys in conflict-affected regions, which often ranges between 30 and 50 per cent (Asgary et al., 2020). This high response rate mitigates concerns about non-response bias and enhances the representativeness of the sample (Saunders, et al. 2019).

**Table 1. Moderating Effects**

| Interaction | β | t | p | Outcome |
|---|---|---|---|---|
| Strategic flexibility × Displacement | −0.105 | 2.035 | 0.042 | Supported |
| Strategic flexibility × Curfews | 0.173 | 2.367 | 0.018 | Supported |
| Strategic flexibility × Supply chain disruption | −0.027 | 0.471 | 0.638 | Not supported |
| Strategic flexibility × Workforce shortage | −0.029 | 0.445 | 0.656 | Not supported |

Source: Field survey data analysis (2026).

The negative interaction indicates that the displacement–performance relationship is weaker at higher levels of flexibility. Since the direct displacement coefficient is positive, the

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pattern is that displacement is associated with higher performance mainly among less flexible firms, while flexible firms perform well regardless of displacement. The thesis interprets this as a buffering effect operating through mobile business models, digital customer relationships and modular assets, in line with Abdulazeez et al. (2025). Those mechanisms were not measured here, so they remain interpretation.

The positive interaction indicates that flexibility strengthens the association between curfew exposure and performance. The thesis reads this as flexible firms capitalising on the disruption of less flexible competitors by using digital channels, delivery services and adjusted hours. This is an enhancing, not a buffering, pattern, and given the discriminant validity concerns around curfews it should be replicated.

Flexibility did not moderate either relationship. Destroyed bridges, occupied highways and checkpoint extortion (Abubakar et al., 2023), and workforce loss through displacement, casualties and trauma (Asogwa et al., 2022; Eze et al., 2024), may impose constraints that supplier switching or cross-training cannot offset. Because neither proxy had a significant direct effect either, a non-significant interaction should also be interpreted with caution.

Previous studies report positive interaction coefficients for flexibility buffering a negative effect (for example, Herhausen et al., 2020; Pathak et al., 2024). The negative displacement interaction here arises because the displacement main effect is positive; the two are not directly comparable, and simple-slope or Johnson–Neyman probing, which would clarify the pattern, is not reported. Flexibility is a strong determinant of performance and a significant moderator for two of four stressors, consistent with dynamic capabilities and contingency theory, but with limits where problems are systemic.

## Conclusion

Strategic flexibility is a critical contingency capability for SMEs in Northern Adamawa. It raises performance directly, moderates the displacement–performance and curfew–performance relationships, and does not moderate the supply chain or workforce relationships. The insurgency–performance link is therefore more complex than a simple negative relationship, shaped by internal capabilities for some stressors and by external institutional constraints for others.

At the end of the study, recommendations were made as follows:

1. SME owners and SMEDAN should deliberately build resource flexibility through movable assets, mobile sales vans and digitally maintained customer contacts.
2. MEs should build coordination flexibility by training managers in rapid decision-making, digital channel switching and redeploying staff to delivery roles during restricted hours.
3. Because flexibility did not moderate supply chain effects, firm effort alone is insufficient. State government and security agencies should consider secured transport corridors for essential goods, rehabilitation of damaged bridges and the removal of illegal checkpoints, and development partners could support cooperative supply depots in the five LGAs.
4. Government, NGOs and trade associations should provide psychosocial support, incentives to retain skilled workers, and a Northern Zone SME labour-pool database.
5. Development agencies should target flexibility capabilities that showed moderating effects, and lenders could consider flexibility indicators in appraisal.

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The design is cross-sectional with self-reported single-informant data; micro-enterprises are excluded; the study covers five LGAs and a constructed frame; discriminant validity between proxies is partial; flexibility was not decomposed into resource and coordination dimensions; and mechanisms and simple slopes were not tested. Future work should use longitudinal designs including closed firms, probe interactions with simple slopes, separate resource and coordination flexibility, test mediators such as customer retention and cost reduction, examine other moderators (for example digital capability and institutional support), and compare conflict zones.

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