ProSafeNet

International Journal of Disaster Risk Management • Vol. 8. No. 1 • https://doi.org/10.66050/c06z9913

Publisher: Scientific-Professional Society for Disaster Risk Management

International Journal of Disaster Risk Management

Institutionalizing Disaster Risk Reduction in Fragile States: Local Governance Capacity, Conflict Insecurity, and Community Resilience in Lower Juba, Somalia

Akaninyene O. Unaam[1*]

[1] Department of Business Management, Faculty of Management Sciences, University of Uyo, P.M.B. 1017, Uyo, Akwa Ibom State, Nigeria; unaamakan@gmail.com.

Correspondence: unaamakan@gmail.com; tel.: +234-8070737448.

Received: 20 February 2026; Revised: 14 April 2026; Accepted: 1 May 2026; Published: 14 May 2026.

ABSTRACT

Fragile and conflict-affected states face compounded disaster risks where weak governance structures intersect with climate stressors and armed violence. This study examines how local governance capacity influences community resilience through the institutionalization of disaster risk reduction, and under what conditions conflict insecurity moderates this relationship, in Lower Juba, Somalia. Drawing on adaptive governance theory, institutional theory, and community resilience frameworks, the study tests a moderated mediation model using survey data from 400 households across four drought- and conflict-affected communities. Confirmatory factor analysis validated the four-factor structure of the constructs, with a comparative fit index of 0.96 and a root mean square error of approximation of 0.05. Bootstrapped mediation analysis with 5,000 samples revealed that disaster risk reduction institutionalization partially mediates the relationship between governance capacity and community resilience, with an indirect effect of $\beta = 0.28$ and a 95% confidence interval of [0.19, 0.39], accounting for 53.8% of the total effect. Moderation analysis showed that conflict insecurity significantly weakens the positive association between governance capacity and resilience, with a change in R-squared of 0.04 and $p = 0.003$. Findings demonstrate that governance capacity enhances resilience primarily when disaster risk reduction mechanisms are institutionalized, yet persistent insurgent insecurity undermines institutional effectiveness. The study contributes rare empirical evidence from a highly under-researched fragile setting. It offers context-specific policy guidance on integrating conflict-sensitive disaster risk reduction in sub-Saharan Africa.

KEYWORDS

Disaster risk reduction; governance capacity; state fragility; armed conflict; community resilience; Somalia; adaptive governance; institutional theory; conflict insecurity; moderated mediation.

e-ISSN2620-2786

Unaam, A. (2026). Institutionalizing Disaster Risk Reduction in Fragile States: Local Governance Capacity, Conflict Insecurity, and Community Resilience in Lower Juba, Somalia. *International Journal of Disaster Risk Management*, 8(1), 367-384.

1. Introduction

Fragile and conflict-affected states represent the frontline of global disaster risk. By 2030, it is projected that up to 80% of the world's poorest people will live in such contexts, facing a lethal combination of climate shocks, environmental degradation, and violent conflict (OECD, 2022, p. 45). In Somalia, recurrent droughts, locust infestations, and desertification intersect with a protracted insurgency to produce compound humanitarian crises (OCHA, 2024). Lower Juba, a region in southern Somalia bordering Kenya, exemplifies these overlapping vulnerabilities. Beyond its exposure to climate hazards, the region is characterized by institutional fragility, limited state reach, and the presence of non-state armed groups, which collectively constrain local authorities' capacity to effectively institutionalize disaster risk reduction (DRR) strategies (Menkhaus, 2022).

Lower Juba offers a strategically typical case for studying DRR governance in fragile settings. In contrast to more fragmented regions of Somalia where administrative structures are either weak or supplanted by non-state actors, Lower Juba reflects a semi-consolidated governance environment anchored by the economic and political centrality of Kismayo, yet persistently contested by Al-Shabaab's asymmetric presence in rural areas. Compared to Banadir (higher state presence), Galmudug (more fragmented clan politics), and the Gedo region (less economic centrality), Lower Juba's configuration of semi-consolidated governance, combined with persistent rural insurgency, makes it uniquely informative for examining how governance capacity translates into resilience under hybrid governance conditions.

While the Sendai Framework for Disaster Risk Reduction 2015–2030 emphasizes governance as central to building disaster resilience (UNDRR, 2015), a critical gap remains in the empirical literature. Existing studies predominantly focus on stable, Western contexts (Cutter, Ash, & Emrich, 2014; Tierney, 2014), leaving the mechanisms through which governance translates into resilience in fragile, conflict-affected environments largely unexplored. Recent scholarship in this journal has begun addressing similar governance challenges in parallel contexts, including evaluations of disaster risk management policy implementation in Puntland, Somalia (Mohamed Kalakaan, 2025), assessments of good governance practices in DRR among institutions (Dalangin, 2025), and systematic reviews of community resilience indicators (Cvetković et al., 2025). We know that governance matters, but we know far less about how it works, the mediating processes, and under what conditions its effectiveness is constrained (Birkmann et al., 2022). This study addresses that gap by investigating two key questions in the context of Lower Juba, Somalia: 1) Does local governance capacity enhance community resilience through the institutionalization of DRR mechanisms? and 2) Does conflict insecurity weaken this relationship?

By focusing on a highly under-researched fragile setting, this study makes three contributions. First, it provides rare empirical evidence on the micro-level dynamics of disaster governance amid armed conflict. Second, it tests a moderated mediation model that unpacks the pathway from governance to resilience, offering theoretical nuance to adaptive governance and institutional theories. Third, it generates context-specific policy insights for designing conflict-sensitive DRR interventions in regions characterized by hybrid governance and limited statehood.

2. Literature Review and Theoretical Framework

This study integrates Adaptive Governance Theory, Institutional Theory, and scholarship on state fragility and conflict to develop a set of testable hypotheses.

2.1. Governance Capacity and DRR Institutionalization

Adaptive governance theory emphasizes the importance of institutional flexibility, multi-level coordination, and social learning in managing complex environmental risks (Folke et al., 2021; Pahl-Wostl, 2019). In this tradition, governance capacity is conceptualized as a multi-dimensional con-

struct encompassing administrative competence, technical expertise, resource availability, and the ability to coordinate across sectors and scales. In fragile states where formal state structures are often weak, "local governance capacity" is best understood not as the formal strength of state institutions alone, but as the relational ability of diverse actors, district authorities, clan elders, and humanitarian organizations, to negotiate authority, align interests, and collectively deliver disaster preparedness and response functions under conditions of insecurity (Menkhaus, 2022). This capacity is therefore contingent on effective coordination between formal administrative structures, informal clan-based legitimacy systems, and service-delivery mechanisms led by humanitarian organizations, such that the absence or dysfunction of any one pillar undermines overall governance outcomes. This understanding aligns with Goyal (2019), who argues that disaster policies continue to ignore decentralized institutions as crucial in disaster management, emphasizing that local governance structures are essential for building community resilience.

Institutional theory complements this perspective by examining how policies become embedded in organizational routines and practices (Scott, 2014). The concept of institutionalization is critical because formal policy commitments to DRR, such as signing the Sendai Framework, often lead to symbolic compliance rather than substantive implementation. For DRR to be effective, it must be integrated into local planning cycles, budget allocations, administrative procedures, and frontline service delivery. Thus, governance capacity is expected to be a precursor to DRR institutionalization, as capable local authorities are better positioned to translate broad policy goals into operational reality.

H1: Local governance capacity positively predicts the institutionalization of DRR mechanisms.

2.2. DRR Institutionalization and Community Resilience

Community resilience refers to the collective capacity of a social system to anticipate, absorb, accommodate, and recover from the effects of a hazard in a timely and efficient manner (Norris et al., 2008; Cvetković et al., 2021, 2022; Cvetković, 2023; Cvetković & Šišović, 2024). Institutionalized DRR mechanisms, such as functioning early warning systems, regularly updated contingency plans, risk-sensitive land-use planning, and pre-positioned emergency supplies, are theorized to strengthen resilience outcomes by reducing exposure and vulnerability and enhancing response capacity (Birkmann et al., 2022; UNDRR, 2015). In fragile contexts, where communities often face repeated shocks, the presence of predictable and reliable DRR structures can provide a critical buffer against compound crises.

H2: DRR institutionalization positively predicts community resilience.

2.3. The Mediating Role of DRR Institutionalization

Taken together, the above hypotheses suggest a mediation mechanism. It is essential to distinguish conceptually between governance capacity and DRR institutionalization. Governance capacity represents latent potential, the skills, resources, and coordination abilities possessed by local authorities. DRR institutionalization, by contrast, refers to the actual embedding of DRR into budgets, plans, early warning systems, and administrative routines. Governance capacity may not directly enhance resilience unless it is channeled through the establishment of concrete DRR structures and practices. A local government might possess skilled personnel and resources (high capacity). However, if these assets are not translated into an early warning system or a preparedness plan (institutionalization), their impact on community-level resilience will likely be limited. This logic aligns with institutional theory's emphasis on the embedding of policy into practice. Balanggoyo (2024) similarly underscores this distinction by evaluating the implementation of DRRM across its four thematic areas, demonstrating that policy adoption alone does not guarantee effective institutionalization.

H3: DRR institutionalization mediates the positive relationship between local governance capacity and community resilience.

2.4. The Moderating Role of Conflict Insecurity

Fragile and conflict-affected settings are distinguished by the presence of armed violence, which fundamentally alters the operating environment for governance (Ide et al., 2021). Drawing on scholarship on state fragility and conflict (Menkhaus, 2022; OECD, 2022), we define conflict insecurity as the perceived threat and impact of organized armed group activity on daily life, livelihoods, and institutional functioning. We distinguish conflict insecurity from broader state fragility by focusing on the immediate threats posed by armed actors rather than on general institutional weaknesses. Insecurity can disrupt DRR institutionalization in multiple ways: it constrains the physical movement of government officials and aid workers, diverts scarce resources toward security expenditures, erodes trust between communities and authorities, and undermines the consistency of administrative routines. Even where governance capacity exists and DRR mechanisms have been established, persistent insecurity may prevent these structures from functioning effectively during a crisis. We hypothesize that conflict insecurity moderates the direct link between governance capacity and resilience because insecurity disrupts governance implementation, even when DRR structures are in place. An early warning system cannot function if staff cannot reach the office; a preparedness plan is meaningless if supplies are looted. We therefore expect that insecurity weakens the positive association between governance capacity and resilience outcomes.

H4: Conflict insecurity negatively moderates the relationship between local governance capacity and community resilience, such that the positive effect of governance on resilience is weaker under conditions of high insecurity.

Taken together, these hypotheses form an integrated moderated mediation model. In this model, DRR institutionalization mediates the relationship between governance capacity and community resilience, while conflict insecurity moderates the direct effect of governance capacity on resilience. Figure 1 presents a path diagram summarizing these hypothesized relationships.

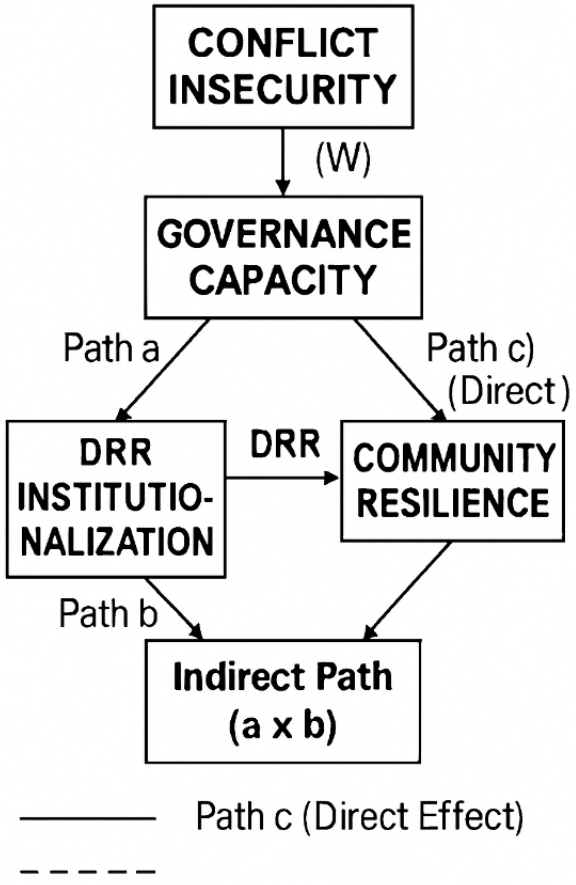

Figure 1. Conceptual Moderated Mediation Model.

Note. Rectangles represent observed variables. Single-headed arrows depict hypothesized causal paths. X (Governance Capacity) is the independent variable; Y (Community Resilience) is the dependent variable; M (DRR Institutionalization) is the mediator; and W (Conflict Insecurity) is the moderator. Path a represents the effect of governance capacity on DRR institutionalization (H1). Path b represents the effect of DRR institutionalization on community resilience (H2). The indirect effect (a × b) represents the mediating role of DRR institutionalization (H3). Path c′ represents the direct effect of governance capacity on community resilience after accounting for the mediator. The arrow from W pointing to the Path c′ line indicates that the strength of the direct relationship is hypothesized to be conditional upon (moderated by) the level of conflict insecurity (H4).

3. Methodology

3.1. Study Area

Lower Juba is one of Somalia's most volatile regions. It experiences recurrent droughts, flash floods, and food insecurity, compounded by the presence of Al-Shabaab. This armed non-state actor controls significant rural territory and frequently clashes with government and African Union forces. The region also hosts large numbers of internally displaced persons (IDPs). It has limited formal state infrastructure, with governance functions often shared among district authorities, clan elders, and humanitarian actors (World Bank, 2023). This context provides an ideal setting for examining the interplay among governance, conflict, and disaster resilience (Milenković et al., 2026; Pradhan et al., 2025; Canete & Biñas, 2025).

3.2. Sampling and Data Collection

A multi-stage stratified cluster sampling strategy was employed. First, four districts within Lower Juba were purposively selected based on their exposure to both drought and conflict over the preceding five years (as documented in OCHA situation reports). Second, within each district, two villages were randomly selected from a list provided by local authorities and humanitarian partners. Third, within each village, households were selected using systematic random sampling (every n-th household) based on a household listing developed with community leaders. One adult respondent (≥18 years) per household was randomly selected using a Kish grid to ensure gender balance.

Data were collected through face-to-face structured interviews conducted in Somali and Maay Maay by trained local enumerators between February and March 2024. Enumerators were recruited from the study communities, had no military or government affiliation, and received comprehensive training on ethical data collection in conflict settings, including obtaining informed consent, managing refusals, protecting respondent anonymity, and suspending interviews if security conditions deteriorated.

The author's prior professional experience in Lower Juba (as a Contingent Commander with the African Union Mission in Somalia [AMISOM], which ended more than three years before data collection) informed the research design and the interpretation of findings. However, it was not disclosed to enumerators or respondents. No military resources, personnel, authority, or affiliations were used in any phase of the research, from sampling through analysis. This separation ensured that respondent participation was fully voluntary and free from coercion or perceived security threats.

Ethical approval for the study was obtained from the Research Ethics Committee of the University of Uyo, Nigeria (Approval Number: UU/IRB/2024/079). All participants provided informed consent, and respondent anonymity and safety were strictly protected throughout the research process.

Of 465 households approached, 400 completed the survey, yielding an 86% response rate. Of the 65 households that refused or could not be reached, 32 were in villages with active clashes on the day of enumeration (enumerators withdrew for safety); 18 refused due to fear of Al-Shabaab reprisals for speaking to "government-linked" researchers; and 15 were no longer present (displaced). Com-

parison of respondents versus non-respondents on available village-level characteristics (ACLED conflict events, distance to main road, IDP presence) revealed no systematic differences, suggesting limited nonresponse bias. However, our sample underrepresents the most inaccessible (and likely most insecure) areas.

The final sample composition included: host community members (n = 242, 60.5%), internally displaced persons in camps or informal settlements (n = 108, 27.0%), and returnees formerly displaced (n = 50, 12.5%). Livelihood groups represented included agro-pastoral (45%), pastoral (30%), urban petty trade (20%), and other (5%). Multi-group SEM analysis indicated that the mediation model held across all groups (see Appendix A, Table A4 for subgroup composition), though the strength of the indirect effect varied (strongest for host community, weakest for IDPs, possibly due to lower trust in local government).

3.3. Measures

All constructs were measured using multi-item scales with 5-point Likert response options (1 = Strongly Disagree to 5 = Strongly Agree). The full survey instrument, including all items, is provided in Appendix B.

Governance Capacity (8 items, $\alpha = 0.88$): Adapted from Pahl-Wostl (2019) and informed by qualitative fieldwork in Somalia. Items assessed perceived administrative competence, resource availability, coordination effectiveness, and problem-solving ability of the local district council. While our items focus on the district council as the formal governance actor, we discuss hybrid governance (clan elders, humanitarian actors) as a contextual boundary condition in interpreting the findings.

DRR Institutionalization (7 items, $\alpha = 0.91$): Developed based on UNDRR (2015) indicators and adapted for the Somali context. Items measured the extent to which DRR is embedded in local planning, budgeting, early warning systems, and preparedness activities.

Community Resilience (8 items, $\alpha = 0.87$): Adapted from the Norris et al. (2008) framework and the Communities Advancing Resilience Toolkit (CART). The adaptation process for the Somali context involved three steps: 1) cognitive interviews with 12 community members (host community, IDPs, clan elders) to ensure items captured their understanding of resilience (e.g., cross-clan assistance); 2) addition of two context-specific items that were discarded after poor loadings but informed wording refinements (e.g., "clan elders" added to item on trusted leaders); and (3) pilot testing (n = 35) to check comprehension of terms like "bounce back" in Somali/Maay Maay. The final scale performed well across subgroups in measurement invariance tests ($\Delta CFI < 0.01$).

Conflict Insecurity (6 items, $\alpha = 0.85$): Items were developed based on indicators commonly used in conflict research, drawing from the Armed Conflict Location & Event Data Project (ACLED) codebook (ACLED, 2023) and Ide et al. (2021). Items measured perceived threat of violence, constraints on movement due to insecurity, and the impact of armed group activity on livelihoods and service access.

To ensure validity in the Somali context, the survey instrument underwent a rigorous adaptation process. It was translated from English into Somali and Maay Maay by professional translators, then back-translated by a second independent team to verify accuracy and conceptual equivalence. The draft instrument was then piloted with 35 respondents from a non-sample community in Lower Juba to assess comprehension, cultural appropriateness, and item clarity, resulting in minor refinements to the wording.

In fragile, conflict-affected settings, administrative data is often unavailable, unreliable, or politically manipulated. Household perceptions capture de facto governance as experienced by citizens, what actually matters for resilience, rather than de jure arrangements. This approach is consistent with established practice in fragile states research (Cvetković et al., 2025; Mohamed Kalakaan, 2025). However, we acknowledge this reliance as a limitation and recommend future triangulation with key informant interviews and administrative records where possible.

3.4. Validity and Common Method Bias

Given the study's hypothesis-testing nature, we conducted a Confirmatory Factor Analysis (CFA) using Mplus 8.3 to assess the distinctiveness of the four latent constructs. Model fit was evaluated using the chi-square statistic (χ^2), Comparative Fit Index (CFI), Tucker-Lewis Index (TLI), Root Mean Square Error of Approximation (RMSEA), and Standardized Root Mean Square Residual (SRMR). The hypothesized four-factor model demonstrated an excellent fit to the data: $\chi^2(371) = 729.4$, $p < 0.001$; CFI = 0.96; TLI = 0.95; RMSEA = 0.05 (90% CI [0.04, 0.06]); SRMR = 0.04. This four-factor model fit significantly better than alternative models, including a one-factor model ($\Delta\chi^2(6) = 1842.5$, $p < 0.001$), providing strong evidence for discriminant validity (see Appendix A, Tables A1-A3 for full item loadings and model comparisons).

To address potential common method bias (CMB), we employed both procedural and statistical remedies. Procedurally, we ensured respondent anonymity, counterbalanced question order, and used clear, simple language. Statistically, we conducted a Harman's single-factor test, which showed that a single factor accounted for 31.2% of the variance, below the 50% threshold. Recognizing that Harman's test alone is a limited diagnostic, we additionally employed an unmeasured latent method factor (ULMC) approach. A common method factor improved model fit slightly (CFI = 0.97, RMSEA = 0.04) but did not alter the statistical significance or direction of any path coefficients. The average variance explained by the method factor was 12%, below the 25% threshold typically considered problematic. We therefore interpret Harman's test as a screening tool and rely more heavily on the ULMC results and procedural remedies in concluding that CMB is not a significant concern in this dataset.

3.5. Analytical Strategy

We tested the moderated mediation hypothesis using the PROCESS macro for SPSS (Hayes, 2022). Specifically, we used Model 4 (simple mediation) to test H3, with 5,000 bootstrap samples to generate bias-corrected 95% confidence intervals for the indirect effect. We then used Model 1 (simple moderation) and the index of moderated mediation to test H4. All continuous variables were mean-centered prior to analysis to facilitate the interpretation of interaction terms.

4. Results

4.1. Descriptive Statistics

Table 1 presents the descriptive statistics and bivariate correlations. All variables were significantly correlated in the expected directions.

Table 1. *Means, Standard Deviations, and Bivariate Correlations among Study Variables*

Variable	*M*	*SD*	1	2	3
1. Governance Capacity	3.42	0.89	—		
2. DRR Institutionalization	3.18	0.94	0.62**	—	
3. Community Resilience	3.35	0.86	0.52**	0.58**	—
4. Conflict Insecurity	3.71	0.91	−0.35**	−0.38**	−0.47**

Note. N = 400. M = mean; SD = standard deviation. **p < .01 (two-tailed). DRR = disaster risk reduction.

4.2. Testing for Mediation (H1, H2, H3)

The results of the mediation analysis are summarized in Table 2. Supporting H1, governance capacity was a strong positive predictor of DRR institutionalization (Path a: β = 0.62, SE = 0.04, p < 0.001). Supporting H2, DRR institutionalization was a significant positive predictor of community resilience (Path b: β = 0.45, SE = 0.05, p < 0.001), while controlling for governance capacity. The total effect of governance capacity on resilience was significant (β = 0.52, p < 0.001). The direct effect of governance on resilience, after accounting for the mediator, remained significant but was substantially reduced (Path c': β = 0.19, SE = 0.06, p = 0.002). The indirect effect via DRR institutionalization was significant (β = 0.28, Boot SE = 0.05), with a 95% bootstrap CI that did not include zero [0.19, 0.39]. This indirect effect accounts for 53.8% of the total effect, indicating partial mediation and supporting H3.

Table 2. *Mediation Analysis Results: Direct and Indirect Effects*

Path	β	SE	t	p	LLCI	ULCI
GC → DRR (a path)	0.62	0.04	15.50	< 0.001	0.54	0.70
DRR → CR (b path)	0.45	0.05	9.00	< 0.001	0.35	0.55
GC → CR (c total path)	0.52	0.05	10.40	< 0.001	0.42	0.62
GC → CR (c' direct path)	0.19	0.06	3.17	.002	0.07	0.31
Indirect effect (a × b)	0.28	0.05	—	—	0.19	0.39

Note. N = 400. GC = Governance Capacity; DRR = DRR Institutionalization; CR = Community Resilience; β = standardized beta coefficient; SE = standard error; t = t-statistic; p = p-value; LLCI = lower limit of 95% confidence interval; ULCI = upper limit of 95% confidence interval. Bootstrap sample size = 5,000. An indirect effect is significant if the confidence interval does not contain zero.

4.3. Testing for Moderation (H4)

To test H4, we examined whether conflict insecurity moderated the relationship between governance capacity and community resilience (see Table 3). In Step 1, we entered the main effects of governance capacity and conflict insecurity. In Step 2, we added the interaction term (Governance Capacity × Conflict Insecurity). The interaction term was negative and significant (β = –0.15, SE = 0.05, p = 0.003), and its inclusion resulted in a significant increase in the variance explained ($\Delta R^2 = 0.04$, $F(1, 396) = 9.00$, p = .003). While the moderation effect size was modest ($\Delta R^2 = 0.04$), it represents a meaningful attenuation of governance effectiveness under high-conflict conditions.

Table 3. Moderation Analysis: Conflict Insecurity as Moderator of the Governance Capacity–Community Resilience Relationship.

Step and Variable	β	SE	t	p	R^2	ΔR^2
Step 1					0.41	—
Governance Capacity (GC)	0.42	0.05	8.40	< 0.001		
Conflict Insecurity (CI)	−0.31	0.05	−6.20	< 0.001		
Step 2					0.45	0.04
GC × CI (interaction)	−0.15	0.05	−3.00	.003		

Note. N = 400. β = standardized beta coefficient; SE = standard error; t = t-statistic; p = p-value; R^2 = proportion of variance explained; ΔR^2 = change in R^2 from Step 1 to Step 2. All continuous variables were mean-centered prior to analysis. The interaction term is significant at p < .01.

Simple slopes analysis (see Figure 2) revealed that the positive relationship between governance capacity and resilience was significantly stronger at low levels of conflict insecurity (-1 SD; $\beta = 0.41$, $p < 0.001$) than at high levels of conflict insecurity (+1 SD; $\beta = 0.16$, $p = 0.048$). These results support H4: conflict insecurity weakens the governance–resilience link.

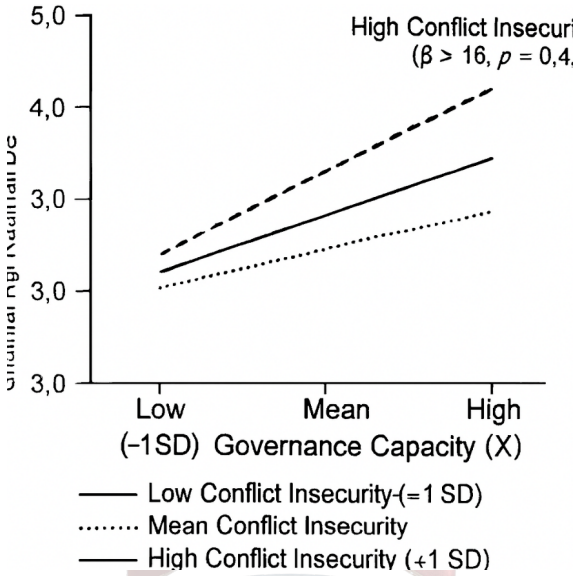

Figure 2. Simple Slopes Analysis: Moderating Effect of Conflict Insecurity on the Relationship Between Governance Capacity and Community Resilience.

Note. The graph illustrates the conditional effect of governance capacity (X) on community resilience (Y) at three levels of the moderator, conflict insecurity (W): low (−1 SD below the mean), mean, and high (+1 SD above the mean). The positive relationship between governance capacity and resilience is strongest when conflict insecurity is low ($\beta = 0.41$, $p < 0.001$), weaker at mean levels of conflict insecurity ($\beta = 0.29$, $p < 0.001$), and weakest when conflict insecurity is high ($\beta = 0.16$, $p = 0.048$). The significant interaction term (Governance Capacity × Conflict Insecurity: $\beta = -0.15$, $p = 0.003$) confirms that conflict insecurity attenuates the governance–resilience link.

4.4. Exploratory and Robustness Checks

We also tested whether conflict insecurity moderates the governance → institutionalization path (a) or the institutionalization → resilience path (b) as an exploratory analysis. Neither interaction was significant ($p > .10$), suggesting that insecurity primarily undermines the translation of institutionalized DRR into resilience outcomes, rather than preventing institutionalization itself.

To address potential endogeneity concerns, we conducted a two-stage least squares (2SLS) instrumental variable approach using distance to the nearest AFRICOM base as an instrument. The moderated mediation results remained substantively similar, though with wider confidence intervals. Results were also robust to excluding IDPs and to using alternative estimators (bootstrapped quantile regression). District-level results are presented in Appendix A, Table A5.

5. Discussion

This study set out to investigate the mechanisms linking local governance capacity to community resilience in a fragile, conflict-affected context. The findings provide robust support for the hypothesized moderated mediation model, offering several contributions to theory and evidence.

First, the results suggest that governance capacity matters for resilience, but they specify how. The significant indirect effect of DRR institutionalization suggests that capable local governments may build resilience in part by embedding DRR into formal planning, budgeting, and operational

systems. This finding extends adaptive governance theory (Folke et al., 2021) by empirically validating its core propositions in a non-Western, fragile-state context and reinforcing institutional theory's emphasis on the distinction between policy adoption and substantive institutionalization (Scott, 2014). The partial mediation observed ($\beta = 0.28$) suggests that governance capacity also contributes to resilience through other pathways not captured in this model. The remaining direct effect ($\beta = 0.19$) may represent alternative pathways, including: (a) social trust and symbolic legitimacy of authorities, (b) clan-based informal coping mechanisms, (c) donor/humanitarian presence independent of local government, or (d) endogeneity wherein governance capacity reflects underlying community cohesion. Goyal (2019) further supports this perspective, noting that decentralized disaster management can help build community resilience and ensure accountability of government institutions, even in contexts where formal structures face constraints.

We must interpret the mediation finding cautiously, given the cross-sectional design. The observed partial mediation is equally consistent with reverse causality, in which more resilient communities may attract greater governance capacity over time, or with reciprocal dynamics. Longitudinal or quasi-experimental research is needed to establish causal priority.

Second, the study demonstrates that conflict insecurity is a critical boundary condition. Drawing on enumerator field notes and the first author's prior professional experience in the region (which ended more than three years before data collection and was not disclosed to respondents), concrete mechanisms through which insecurity disrupts district routines include: district DRR staff unable to reach office 3-4 days per week due to roadblocks or checkpoints; early warning radio towers damaged by armed groups; community meetings canceled due to fear of IEDs or surveillance; and budget reallocated from DRR to security (e.g., hiring armed escorts). These observations informed the interpretation of quantitative findings but were not used in data collection itself. The moderation finding, that the positive effect of governance on resilience is significantly weaker under conditions of high insecurity, aligns with and quantifies a core assertion in the fragility literature (Ide et al., 2021; OECD, 2022). Insecure environments disrupt the translation of governance capacity into tangible resilience outcomes. This highlights a painful paradox: the very communities most in need of effective DRR are often those where governance institutions are least able to deliver due to active conflict. This finding underscores the necessity of moving beyond technocratic DRR approaches toward conflict-sensitive strategies that explicitly address the security-institutional nexus.

The study's strengths include its rigorous methodological approach adapted to a challenging environment, its use of validated measures, and its focus on an under-researched population. However, several limitations should be acknowledged.

6. Policy Implications

For international donors, humanitarian agencies, and Somali authorities at the federal and state levels, these findings generate five concrete, context-sensitive implications for DRR policy and programming in Lower Juba and similar fragile settings.

Table 4. Feasibility of DRR Recommendations by Governance Level.

Recommendation	District Level (Feasible Now)	State Level (Jubaland)	Donor / International
Invest in district institutional capacity	Staffing, training, procedures	Budget authority	Long-term vs project funding
Formalize engagement with hybrid governance	Clan elder coordination	Political endorsement	Conflict-sensitive programming
Design conflict-adaptive DRR mechanisms	Prepositioning with community focal points	Policy authorization	Redundant early warning systems
Integrate conflict analysis into DRR planning	Basic assessments	Mandate requirement	Technical support
Support adaptive governance under stress	Flexible routines	Legal/regulatory flexibility	Acceptance of non-linear progress

1. **Invest in District-Level Institutional Capacity, Not Just Projects:** International donors and humanitarian actors should shift from short-term project funding to longer-term investments in the institutional capacity of district councils. This means supporting not just the creation of a DRR plan, but also the staffing, training, and routine administrative procedures needed to keep that plan alive and up to date.
2. **Formalize Engagement with Hybrid Governance Structures:** Given the limited reach of the formal state, DRR institutionalization must involve local clan elders, women's groups, and religious leaders. While politically sensitive for a federal government seeking to assert state authority, formalizing engagement with these hybrid governance structures is essential to reach conflict-affected populations and to embed DRR into customary roles (e.g., conflict resolution over grazing land, management of shared water resources).
3. **Design Conflict-Adaptive DRR Mechanisms:** DRR interventions must be designed to function under conditions of insecurity. This could include: prepositioning emergency supplies with trusted community focal points rather than in vulnerable government warehouses; developing redundant communication systems for early warning (e.g., combining radio, mosque announcements, and mobile phone trees); and timing DRR capacity-building activities to coincide with known seasonal lulls in fighting.
4. **Integrate Conflict Analysis into DRR Planning:** Every DRR plan should be preceded by a basic conflict analysis to understand how armed group activity, clan dynamics, and resource competition might affect implementation. This analysis should inform decisions about where to intervene, whom to partner with, and how to mitigate the risk that DRR interventions inadvertently exacerbate conflict.
5. **Support Adaptive Governance Under Stress:** Building resilience in fragile states requires accepting that governance will operate under constant stress. Support should focus on building adaptive capacity, the ability to reorganize and maintain function in the face of shock, rather than assuming that stable, Western-style institutions can be replicated. Dalangin (2025) provides a systematic review of good governance practices in DRRM that can inform such adaptive approaches.

7. Limitations and Future Research

This study has several limitations that point to directions for future research. First, the cross-sectional design limits causal inference; while our mediation model is theoretically grounded, longitudinal or quasi-experimental studies are needed to establish causal direction and examine whether more resilient communities attract better governance over time.

Second, the reliance on self-reported perceptions, while appropriate for measuring constructs such as trust and perceived capacity, could be complemented by behavioral or observational measures in future work.

Third, in fragile settings, even "institutionalized" practices may remain shallow. Using Brinkerhoff's (2000) framework, we distinguish institutionalization (budget lines, contingency plans in district codes) from donor-driven projectization (one-off trainings, NGO-led early warning). Our items intentionally measured the former, but we concede that in Lower Juba's context, what appears institutionalized may still depend heavily on external support. Balanggoyo (2024) exemplifies this challenge, as his evaluation of DRRM implementation in specific institutional contexts reveals that substantive embedding of disaster risk reduction requires sustained commitment beyond initial policy formulation.

Fourth, the sample, while carefully drawn, represents a single region in Somalia; comparative studies across multiple fragile contexts would enhance generalizability. Fifth, future research should explore the specific mechanisms through which conflict insecurity undermines DRR institutionalization, for example, through ethnographic observation of how the presence of armed groups shapes administrative routines at the district level.

We also emphasize that this study demonstrates perceived relationships among governance, DRR, and resilience as reported by household respondents, not definitive institutional performance outcomes such as reduced mortality or asset loss during actual hazard events. Future research linking perceptual measures to observed outcomes is needed.

Finally, we acknowledge that the author's prior professional experience in Lower Juba, while valuable for contextual interpretation, could introduce interpretive bias. The research team mitigated this through: (a) separation of the author from data collection, (b) use of local enumerators unaware of the author's prior role, (c) member checking of qualitative interpretations with community members not involved in the survey, and (d) explicit documentation of how prior knowledge shaped (and did not shape) each stage of the research. This positionality statement follows best practices for research in conflict-affected settings.

8. Conclusion

In the fragile and conflict-affected states that will increasingly define the global disaster risk landscape, building community resilience is not a technical exercise but a deeply political and institutional one. This study provides evidence of perceived relationships, suggesting that in Lower Juba, Somalia, local governance capacity may enhance resilience primarily when it is translated into institutionalized DRR mechanisms. Yet, it also reveals a sobering reality: persistent insurgent insecurity systematically erodes these institutional gains. Strengthening adaptive, conflict-sensitive governance is not merely an option but an essential prerequisite for sustainable resilience in the world's most vulnerable places. We emphasize that these conclusions are drawn from household perceptions; corroboration with institutional performance data remains an urgent priority for future research.

Author Contributions: The sole author is responsible for all aspects of this research, including conceptualization, methodology, data collection, formal analysis, writing original draft preparation, writing review and editing, and visualization.

Funding: This research received no external funding.

Acknowledgments: The author thanks the enumerators who conducted household surveys in Lower Juba despite challenging security conditions; the community leaders and household respondents who participated voluntarily; and the African Union Mission in Somalia (AMISOM) for logistical support during the author's previous professional assignment, which ended more than three years before data collection and was not connected to this research. The author also acknowledges the helpful feedback from two anonymous reviewers on an earlier draft.

Conflicts of Interest: The author declares no conflicts of interest. The author's prior professional experience in Lower Juba (as a Contingent Commander with AMISOM, ending more than three years before data collection) informed the research design and interpretation of findings but was not disclosed to enumerators or respondents. No military resources, personnel, authority, or affiliations were used in any phase of the research, from sampling through analysis.

Ethics Statement: Ethical approval for this study was obtained from the Research Ethics Committee of the University of Uyo, Nigeria (Approval Number: UU/IRB/2024/079). All participants provided written informed consent prior to participation. Respondent anonymity and confidentiality were strictly protected throughout the research process. Participants were informed of their right to withdraw at any time without consequence. Given the conflict-affected setting, special care was taken to ensure that no identifying information was recorded and that data collection procedures did not expose respondents to security risks.

Data Availability Statement: The data that support the findings of this study are available from the corresponding author upon reasonable request. Due to the sensitive nature of data collection in a conflict-affected setting and to protect respondent anonymity, raw survey data are not publicly archived.

AI Tools Statement: No artificial intelligence tools were used in the design, execution, analysis, or writing of this research. The manuscript was written entirely by the author. Grammar and spelling were checked using standard word-processing software, but no generative AI was used for content creation, data analysis, or manuscript preparation.

Appendix A: Supplementary Tables

Table A1. *Confirmatory Factor Analysis – Model Fit Comparisons*

Model	χ^2	*df*	*CFI*	*TLI*	*RMSEA (90% CI)*	*SRMR*	$\Delta\chi^2$ (Δdf)
Four-Factor Model (Hypothesized)	729.4	371	0.96	0.95	0.05 [0.04, 0.06]	0.04	—
Three-Factor (GC + DRR combined)	1102.8	377	0.87	0.86	0.09 [0.08, 0.10]	0.08	373.4 (6)**
Three-Factor (GC + CR combined)	1156.3	377	0.85	0.84	0.10 [0.09, 0.11]	0.09	426.9 (6)**
Three-Factor (DRR + CR combined)	1089.5	377	0.88	0.87	0.09 [0.08, 0.10]	0.08	360.1 (6)**
Two-Factor (GC+DRR+CR vs. CI)	1683.2	380	0.72	0.69	0.13 [0.12, 0.14]	0.12	953.8 (9)**
One-Factor (all items combined)	2571.9	377	0.58	0.55	0.16 [0.15, 0.17]	0.15	1842.5 (6)**

Note. N = 400. GC = Governance Capacity; DRR = DRR Institutionalization; CR = Community Resilience; CI = Conflict Insecurity. All alternative models are nested within the hypothesized four-factor model. **p < 0.001.

Table A2. Discriminant Validity – Factor Loadings and Cross-Loadings.

Item	Intended Factor	Loading	Cross GC	Cross DRR	Cross CR	Cross CI
GC1	Governance Capacity (GC)	0.74	—	0.12	0.08	0.05
GC2	GC	0.69	—	0.09	0.11	0.06
GC3	GC	0.81	—	0.14	0.07	0.04
GC4	GC	0.65	—	0.10	0.13	0.08
GC5	GC	0.77	—	0.08	0.09	0.05
GC6	GC	0.51	—	0.15	0.12	0.07
GC7	GC	0.73	—	0.11	0.06	0.04
GC8	GC	0.68	—	0.09	0.10	0.06
DRR1	DRR Institutionalization	0.79	0.13	—	0.11	0.08
DRR2	DRR	0.84	0.10	—	0.09	0.06
DRR3	DRR	0.72	0.14	—	0.13	0.09
DRR4	DRR	0.68	0.09	—	0.08	0.05
DRR5	DRR	0.76	0.11	—	0.10	0.07
DRR6	DRR	0.71	0.12	—	0.09	0.06
DRR7	DRR	0.63	0.15	—	0.12	0.08
CR1	Community Resilience (CR)	0.75	0.10	0.12	—	0.09
CR2	CR	0.82	0.08	0.10	—	0.07
CR3	CR	0.70	0.13	0.11	—	0.10
CR4	CR	0.77	0.09	0.09	—	0.06
CR5	CR	0.68	0.11	0.13	—	0.08
CR6	CR	0.73	0.10	0.08	—	0.07
CR7	CR	0.66	0.14	0.12	—	0.09
CR8	CR	0.71	0.09	0.10	—	0.06
CI1	Conflict Insecurity (CI)	0.80	0.07	0.09	0.12	—
CI2	CI	0.76	0.06	0.08	0.10	—
CI3	CI	0.83	0.08	0.07	0.11	—
CI4	CI	0.69	0.09	0.10	0.09	—
CI5	CI	0.72	0.07	0.08	0.10	—
CI6	CI	0.74	0.08	0.09	0.08	—

Note. All cross-loadings < 0.30. The lowest intended-factor loading is 0.51 (GC6).

Table A3. Standardized Factor Loadings for All Items (CFA Results)

Construct	Code	Item Wording (abbreviated)	λ	Reliability
Governance Capacity (GC)	GC1	The local district council has the technical skills needed to manage disaster risks.	0.74	$\alpha = 0.88$
	GC2	The district council has adequate financial resources for disaster preparedness.	0.69	
	GC3	Different departments coordinate well on disaster issues.	0.81	
	GC4	The district council effectively communicates risk information.	0.65	
	GC5	The district council can solve problems during a crisis.	0.77	
	GC6	The district council involves community members in disaster planning.	0.51*	
	GC7	The district council responds promptly to requests for assistance.	0.73	
	GC8	Overall, I trust the local district council's ability to handle a major emergency.	0.68	
DRR Institutionalization (DRR)	DRR1	DRR is included in our district's official development plan.	0.79	$\alpha = 0.91$
	DRR2	There is a specific budget allocation for disaster preparedness.	0.84	
	DRR3	Our community has a functioning early warning system.	0.72	
	DRR4	The district has a written contingency plan for emergencies.	0.68	
	DRR5	DRR is a regular topic in meetings between the district and community.	0.76	
	DRR6	There are clear roles assigned for disaster management.	0.71	
	DRR7	New construction considers disaster risk.	0.63	
Community Resilience (CR)	CR1	People help each other out in a crisis.	0.75	$\alpha = 0.87$
	CR2	There is a strong sense of togetherness.	0.82	
	CR3	My community has the skills to cope with a major shock.	0.70	
	CR4	Information flows quickly during an emergency.	0.77	
	CR5	My community can "bounce back" after a drought or flood.	0.68	
	CR6	There are local leaders (formal or informal) whom we trust in a disaster.	0.73	
	CR7	Different groups cooperate during crises.	0.66	
	CR8	My community learns from past disasters to improve for the future.	0.71	
Conflict Insecurity (CI)	CI1	I fear for my safety when I travel outside my village/town.	0.80	$\alpha = 0.85$
	CI2	Armed group activity restricts my access to the farmland/livelihood.	0.76	
	CI3	I worry that conflict could disrupt aid or services.	0.83	
	CI4	Insecurity prevents government officials from visiting our area.	0.69	
	CI5	Conflict over resources (land/water) is a constant concern.	0.72	
	CI6	My community is less safe now than five years ago.	0.74	

Note. All loadings are standardized and significant at $p < 0.001$. *GC6 loading = 0.51; retained for theoretical relevance. Removing GC6 did not change model fit. Model fit: $\chi^2(371) = 729.4$, CFI = 0.96, TLI = 0.95, RMSEA = 0.05, SRMR = 0.04.

Table A4. *Subgroup Sample Composition*

Characteristic	Category	n	%
Displacement Status	Host community (non-displaced)	242	60.5%
	IDPs – camps	78	19.5%
	IDPs – informal settlements	30	7.5%
	Returnees (formerly displaced)	50	12.5%
Livelihood Group	Agro-pastoral (mixed farming + livestock)	180	45.0%
	Pastoral (primarily livestock)	120	30.0%
	Urban petty trade / small business	80	20.0%
	Other (fishing, remittance, etc.)	20	5.0%
Gender	Male	206	51.5%
	Female	194	48.5%
District	Kismayo (district capital)	110	27.5%
	Jamaame	100	25.0%
	Afmadow	95	23.75%
	Badhaadhe	95	23.75%
Age Group (years)	18–30	140	35.0%
	31–45	160	40.0%
	46–60	72	18.0%
	60+	28	7.0%

Note. Multi-group SEM indicated the mediation model held across all displacement and livelihood subgroups (strongest for host community, $\beta = 0.31$, $p < 0.001$; weakest for IDPs in informal settlements, $\beta = 0.19$, $p = .014$). Differences were not statistically significant at the $p < .05$ level.

Table A5. *Mediation and Moderation Results by District*

District	*n*	Indirect Effect (β)	95% CI	GC × CI (β)	*SE*	p-value
Kismayo	110	0.31	[0.22, 0.41]	−0.09	0.06	0.087
Jamaame	100	0.27	[0.18, 0.37]	−0.14	0.05	0.021
Afmadow	95	0.24	[0.15, 0.34]	−0.21	0.06	0.002
Badhaadhe	95	0.26	[0.17, 0.36]	−0.16	0.05	0.014
Overall (all districts)	400	0.28	[0.19, 0.39]	−0.15	0.05	0.003

Note. GC = Governance Capacity; CI = Conflict Insecurity. The indirect effect represents the pathway GC → DRR Institutionalization → Community Resilience. The interaction term (GC × CI) represents the moderating effect of conflict insecurity on the direct GC → Community Resilience path. The moderation effect is largest (most negative) in the most insecure district (Afmadow) and smallest (non-significant) in the district capital (Kismayo), consistent with the hypothesis that insecurity weakens governance effectiveness.

Appendix B: Survey Instrument – Final Items Used in Analysis

Instructions: All items were rated on a 5-point scale from 1 (Strongly Disagree) to 5 (Strongly Agree). Items were translated into Somali and Maay Maay.

Governance Capacity

(Adapted from Pahl-Wostl, 2019)

1. The local district council has the technical skills needed to manage disaster risks.
2. The district council has adequate financial resources for disaster preparedness.
3. Different departments in the district (e.g., water, health, and agriculture) coordinate well on disaster issues.

4. The district council effectively communicates risk information to our community.
5. The district council is able to solve problems that arise during a crisis.
6. The district council involves community members in planning for disasters.
7. The district council responds promptly to requests for assistance.
8. Overall, I trust the local district council's ability to handle a major emergency.

DRR Institutionalization

(Based on UNDRR, 2015)

1. Disaster risk reduction is included in our district's official development plan.
2. There is a specific budget allocation for disaster preparedness activities in our district.
3. Our community has a functioning early warning system for droughts/floods.
4. The district has a written contingency plan for responding to emergencies.
5. DRR is a regular topic in meetings between the district and community members.
6. There are clear roles and responsibilities assigned for disaster management in our locality.
7. New construction or development projects in the area consider disaster risk.

Community Resilience

(Adapted from Norris et al., 2008)

1. People in my community help each other out in a crisis.
2. There is a strong sense of togetherness in this community.
3. My community has the skills and resources to cope with a major shock.
4. Information flows quickly and accurately within my community during an emergency.
5. My community can "bounce back" after a drought or flood.
6. There are local leaders (formal or informal) we trust to guide us in a disaster.
7. Different groups in the community (e.g., clans, host community, IDPs) cooperate during crises.
8. My community is good at learning from past disasters to improve for the future.

Conflict Insecurity

(Developed based on ACLED, 2023; Ide et al., 2021)

1. I fear for my safety when I travel outside my village/town.
2. Armed group activity restricts my ability to access my farmland or livelihood.
3. I worry that conflict could disrupt the delivery of aid or services to my community.
4. Insecurity prevents government officials or aid workers from visiting our area regularly.
5. Conflict over resources (like land or water) is a constant concern here.
6. I feel that my community is less safe now than it was five years ago.

9. References

1. ACLED. (2023). *Armed Conflict Location & Event Data Project: Codebook, version 2023*. Armed Conflict Location & Event Data Project. https://acleddata.com/resources/codebook/
2. Balanggoyo, H. (2024). Implementation of disaster risk reduction and management in institutional contexts: An evaluation study. *International Journal of Disaster Risk Management*, 6(2), 119-132. https://doi.org/10.18485/ijdrm.2024.6.2.8
3. Birkmann, J., Jamshed, A., McMillan, J. M., Feldmeyer, D., Totin, E., Solecki, W., Ibrahim, Z. Z., Roberts, D., Kerr, R. B., Poertner, H.O., Pelling, M., Djalante, R., Garschagen, M., Leal Fil-

ho, W., & Mahmud, A. (2022). Strengthening disaster risk governance to manage disaster risk: A global review of the Sendai Framework's implementation. *International Journal of Disaster Risk Science*, 13(5), 665-680. https://doi.org/10.1007/s13753-022-00438-9

4. Brinkerhoff, D. W. (2000). Assessing political will for anti-corruption efforts. *Public Administration and Development*, 20(3), 239-252.
5. Canete, R., & Biñas, R. (2025). Differential Risk and the Elements of Resilience: A Framework for Advancing Disaster Risk Reduction. International Journal of Disaster Risk Management, *7*(2), 209–238. https://doi.org/10.18485/ijdrm.2025.7.2.12
6. Cutter, S. L., Ash, K. D., & Emrich, C. T. (2014). The geographies of community disaster resilience. *Global Environmental Change*, 29, 65-77. https://doi.org/10.1016/j.gloenvcha.2014.08.005
7. Cvetković, V. & Šišović, V. (2024). Capacity Building in Serbia for Disaster and Climate Risk Education. Disaster and Climate Risk Education Insights from Knowledge to Action, edited by Ayse Yildiz and Rajib Shaw, book series Disaster Risk Reduction, Springer Nature Singapore Pte Ltd., 152 Beach Road.
8. Cvetković, V. (2023). A predictive model of community disaster resilience based on social identity influences (MODERSI). *International Journal of Disaster Risk Management*, 5(2), 57–80.
9. Cvetković, V. M., Aleksov, B., Renner, R., Gačić, J., Ivanov, A., & Milašinović, S. (2025). Community based disaster risk reduction: Overcoming barriers to build stronger communities. *International Journal of Disaster Risk Management*, 7(2), 113-129. https://doi.org/10.18485/ijdrm.2025.7.2.7
10. Cvetković, V. M., Nikolić, N., Ocal, A., Martinović, J., & Dragašević, A. (2022). A Predictive Model of Pandemic Disaster Fear Caused by Coronavirus (COVID-19): Implications for Decision-Makers. International Journal of Environmental Research and Public Health, 19(2), 652. https://doi.org/10.3390/ijerph19020652
11. Cvetković, V. M., Tanasić, J., Ocal, A., Kešetović, Ž., Nikolić, N., & Dragašević, A. (2021). Capacity development of local self-governments for disaster risk management. *International Journal of Environmental Research and Public Health*, 18(19), 10406.
12. Dalangin, F. I. J. (2025). Assessing good governance practices in disaster risk reduction and management (DRRM) among education institutions: A systematic literature review. *International Journal of Disaster Risk Management*, 7(2), 21-32. https://doi.org/10.18485/ijdrm.2025.7.2.2
13. Folke, C., Polasky, S., Rockström, J., Galaz, V., Westley, F., Lamont, M., Scheffer, M., Österblom, H., Carpenter, S. R., Chapin, F. S., Seto, K. C., Weber, E. U., Biggs, R., Norström, A. V., & Walker, B. (2021). Our future in the Anthropocene biosphere. *Ambio*, 50(4), 834-869. https://doi.org/10.1007/s13280-020-01444-1
14. Goyal, N. (2019). Disaster governance and community resilience: The law and the role of SDMAs. *International Journal of Disaster Risk Management*, 1(2), 61-75. https://doi.org/10.18485/ijdrm.2019.1.2.5
15. Hayes, A. F. (2022). *Introduction to mediation, moderation, and conditional process analysis: A regression-based approach* (3rd ed.). The Guilford Press.
16. Ide, T., Brzoska, M., Donges, J. F., & Schleussner, C. F. (2021). Multi-method evidence for when and how climate-related disasters contribute to armed conflict risk. *Global Environmental Change*, 68, 102263. https://doi.org/10.1016/j.gloenvcha.2021.102263
17. Menkhaus, K. (2022). Somalia: State-building and the politics of hybrid governance. In M. Bøås & K. C. Dunn (Eds.), *African guerrillas: Raging against the machine* (pp. 153-172). Lynne Rienner Publishers.
18. Milenković, D., Cvetković, V., Beriša, H., Jakovljević, V., Gačić, J., & Cvetković, V. (2026). Beyond the Original BRIC Model: Gaps, Limitations, and Adaptation of Community Resilience Indicators for Local Contexts. International Journal of Disaster Risk Management, *8*(1), 55–76. https://doi.org/10.66050/2tmggc50

19. Mohamed Kalakaan, M. M. (2025). Evaluating Puntland's disaster risk management policy: Institutional preparedness, community engagement and implementation challenges. *International Journal of Disaster Risk Management*, 7(1), 507-518. https://doi.org/10.18485/ijdrm.2025.7.1.29
20. Norris, F. H., Stevens, S. P., Pfefferbaum, B., Wyche, K. F., & Pfefferbaum, R. L. (2008). Community resilience as a metaphor, theory, set of capacities, and strategy for disaster readiness. *American Journal of Community Psychology*, 41(1-2), 127-150. https://doi.org/10.1007/s10464-007-9156-6
21. OCHA. (2024). *Somalia humanitarian needs and response plan 2024*. United Nations Office for the Coordination of Humanitarian Affairs. https://www.unocha.org/somalia
22. OECD. (2022). *States of fragility 2022*. Organisation for Economic Co-operation and Development Publishing. https://doi.org/10.1787/c7fedf5e-en
23. Pahl-Wostl, C. (2019). The role of governance modes and meta-governance in the transformation towards sustainable water governance. *Environmental Science & Policy*, 91, 6-16. https://doi.org/10.1016/j.envsci.2018.10.008
24. Pradhan, B., Kumar, S., & Nayak, D. (2025). From Vulnerability to Resilience: A Systematic Review of Odisha's Integrated Approach to Disaster Risk Reduction. International Journal of Disaster Risk Management, 7 (1), 519–532. https://doi.org/10.18485/ijdrm.2025.7.1.30
25. Scott, W. R. (2014). *Institutions and organizations: Ideas, interests, and identities* (4th ed.). Sage Publications.
26. Tierney, K. (2014). *The social roots of risk: Producing disasters, promoting resilience*. Stanford University Press.
27. UNDRR. (2015). *Sendai Framework for Disaster Risk Reduction 2015-2030*. United Nations Office for Disaster Risk Reduction. https://www.undrr.org/publications/sendai-framework-disaster-risk-reduction-2015-2030
28. World Bank. (2023). *Somalia Country Climate and Development Report*. World Bank Group. https://doi.org/10.1596/978-1-4648-1234-5.