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Female Gender Empowerment, Individualism, Collectivism, and Resilience: A Comparative Study in the Context of Disaster Risk Management

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ABSTRACT

The paper examines the relationship between female gender empowerment, societal ideologies (individualism and collectivism), and disaster resilience. It examines whether higher female empowerment is correlated with greater individualism and whether male empowerment aligns with collectivist values. Additionally, it evaluates how these ideological orientations influence societal resilience in disaster contexts. Utilising data from the Global Gender Gap Report, Hofstede's Cultural Dimensions, and the UNDRR Resilience Index, this study employs Pearson's correlation analysis to determine relationships between gender empowerment and ideology. At the same time, multiple regression modelling assesses their impact on disaster resilience. Findings reveal a strong correlation between female empowerment and individualism, as well as between male empowerment and collectivism. Regression results indicate that individualism has a negative influence on resilience, while collectivism enhances resilience. These results suggest that collectivist societies, often characterised as male-dominated, may provide stronger structural support for disaster risk management, whereas individualistic societies linked to female empowerment may face challenges in coordinating disaster responses. The findings underscore the need for policies that integrate both individualistic and collectivist strengths to enhance global disaster response and sustainable development.

KEYWORDS

Gender empowerment; individualism; collectivism; disaster resilience; risk management.

1. Introduction

Disasters, whether natural or anthropogenic, present significant challenges to global societies, necessitating robust resilience mechanisms to mitigate their impacts. The resilience of a society is shaped by multiple factors, including governance structures, economic stability, social cohesion,

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and cultural ideologies (Cutter et al., 2003; Wisner et al., 2004). Among these, female gender empowerment and societal orientations—individualism and collectivism—have emerged as critical yet often overlooked determinants of disaster risk management (Fordham, 2011; Khan, 2016). However, despite growing interest in gender-sensitive and culturally adaptive resilience strategies, the intersection of gender dynamics, societal organisation, and disaster resilience remains underexplored in empirical disaster research (Cvetkovic & Martinovic, 2020; Cvetkovic & Planic, 2022; Molnar, 2024; Hasan & Sultana, 2024).

Female gender empowerment, often measured by political representation, economic participation, educational attainment, and social agency, varies across societies (World Economic Forum [WEF], 2023). Existing literature suggests that societies with high female empowerment tend to exhibit individualistic characteristics, emphasising autonomy, self-reliance, and personal achievement (Smith, 2022; Lee & Kim, 2020). Conversely, societies with dominant male empowerment often align with collectivist values, prioritising group cohesion, interdependence, and hierarchical social structures (Hofstede, 2001). This dichotomy raises critical questions about the role of cultural orientations in shaping disaster resilience—questions that existing disaster risk management frameworks have yet to adequately address, often employing one-size-fits-all approaches that overlook context-specific gender and cultural dynamics.

Resilience, as defined by the United Nations Office for Disaster Risk Reduction (UNDRR, 2021), refers to a society's ability to anticipate, absorb, adapt to, and recover from hazards in a timely and efficient manner. While individualistic societies may leverage innovation and decentralised decision-making in disaster management, collectivist societies often demonstrate stronger social networks and more coordinated response mechanisms (Enarson & Morrow, 1998; Cutter et al., 2003). In today's increasingly interconnected and climate-volatile world, where risk is both globalised and unevenly distributed, understanding the cultural ideologies that inform risk perception, behavioural responses, and institutional trust is more critical than ever. This study thus aims to illuminate how the intersection of gender empowerment and cultural orientation can inform more inclusive and context-sensitive strategies for building resilience. This study addresses that gap by investigating the relationship between female gender empowerment, cultural ideologies, and resilience in disaster contexts through a large-scale comparative analysis across 120 countries. Unlike most existing studies, which examine these elements in isolation or within single-country contexts, this research offers a novel, interdisciplinary lens that combines insights from disaster studies, gender studies, cultural sociology, and global development. The study provides new empirical evidence on how the interplay between empowerment and cultural value systems affects a society's ability to cope with and recover from disasters. It also raises critical implications for international disaster governance and the design of locally appropriate policies.

1.1. Problem Statement

Despite extensive research on disaster resilience, a significant gap remains in the studies examining the specific role of female gender empowerment and cultural ideologies in shaping disaster response and recovery (Norris et al., 2008; Khan, 2016). Traditional resilience frameworks often focus on economic and infrastructural factors, neglecting the socio-cultural dimensions that influence community adaptation and crisis management (Mileti, 1999). This oversight has led to generalised policy prescriptions that fail to account for the unique strengths and vulnerabilities of different societal configurations.

Moreover, while prior research has established correlations between female gender empowerment and societal ideologies (Hofstede, 2001; Smith, 2022), there has been little attention paid to how these relationships affect disaster resilience. Empirical studies have shown that collectivist societies tend to exhibit more cohesive disaster responses; however, the extent to which gender power structures influence this remains unclear (Wisner et al., 2004; Enarson & Morrow, 1998).

Furthermore, as female gender empowerment initiatives continue to reshape societal dynamics, it is essential to evaluate whether shifts toward individualism or collectivism enhance or hinder

disaster resilience. Without a comprehensive understanding of these interdependencies, disaster risk management policies may fail to optimise societal strengths or inadvertently reinforce vulnerabilities. This study aims to address these gaps by systematically analysing the correlation between female gender empowerment, societal orientations, and resilience, using cross-national data from globally recognised indices.

1.2. Research Questions

The following research questions guide the study:

1. Are collectivist societies better equipped to handle natural disasters compared to individualistic ones?
2. Is there a positive relationship between increased female empowerment and higher levels of individualism?
3. Does greater male empowerment align with stronger collectivist tendencies?

2.3. Objectives of the Study

The objectives of the paper are:

1. To examine whether collectivist societies exhibit greater resilience to natural disasters than individualistic societies;
2. To assess the relationship between female empowerment and individualistic cultural orientations;
3. To explore the association between male empowerment and collectivist cultural values.

1.4. Female Gender Empowerment and Disaster Resilience

Empirical evidence increasingly supports the notion that female empowerment enhances disaster resilience. The World Economic Forum (2023) reports that societies with higher gender parity exhibit stronger adaptive capacities in disaster contexts. Smith (2022) argues that female empowerment fosters inclusive governance, thereby enhancing the efficacy of disaster response. Khan (2016) asserts that gender-responsive disaster management is integral to sustainable development, advocating for policies that incorporate women's leadership in resilience planning.

Enarson and Morrow (1998) offer a gendered analysis of disaster experiences, illustrating how women face unique vulnerabilities yet make significant contributions to community resilience. Similarly, Morrow and Enarson (1996) found that during Hurricane Andrew, women's social networks played a pivotal role in recovery efforts. Jenkins and Phillips (2008) extend this argument, revealing that disasters exacerbate gender-based violence, necessitating gender-responsive policies.

Recent studies further underscore the importance of gender in disaster preparedness. Cvetković et al. (2018) found that in Serbia, women demonstrated more household-caring attitudes and behaviours and were more prone to report a willingness to help flood victims at reception centres, highlighting the need for gender-aware disaster planning.

1.5 Cultural Ideologies: Individualism vs. Collectivism

Hofstede's (2001) seminal work on cultural dimensions identifies individualism and collectivism as key societal orientations that influence behavioural and institutional responses. Individualistic societies prioritise autonomy, self-reliance, and decentralised decision-making, whereas collectivist societies emphasise group cohesion, interdependence, and hierarchical structures (Lee & Kim, 2020).

The implications of these orientations for disaster resilience are profound. Asgari et al. (2018) found that collectivist communities exhibit higher social support networks, which enhance psychological resilience in crises. Conversely, individualistic societies utilise technological innovation and decentralised governance to enhance their adaptive capacity (Pelling, 2003).

While both orientations contribute to resilience, their effectiveness is context-dependent. Gurung (1999) argues that collectivist societies, particularly in the Global South, exhibit strong informal support mechanisms that mitigate the impacts of disasters. However, Davis and Alexander (2016) caution that excessive reliance on communal structures may hinder rapid decision-making in emergencies. This complexity underscores the need for hybrid models that integrate the strengths of both orientations. A recent case study, such as Jaiye and Benjamine's (2021), examines Nigeria's approach to building resilience through local and international partnerships in disaster risk management. It highlights how collaborations between national agencies, international organisations, and donor institutions contribute to disaster preparedness and response.

The study also emphasises the role of Nigeria's National Emergency Management Agency (NEMA) and global entities, such as the UNDP and the EU, in shaping disaster diplomacy and resilience strategies. It examines the impact of COVID-19 on disaster management, demonstrating how global crises necessitate coordinated efforts across borders, and suggests that combining individualistic and collectivist approaches can be a practical solution. In their study, Ieksandrina, Budiarti, Yu, Pasha, and Shaw (2019) explore how governments can encourage small and medium-sized enterprises (SMEs) to actively participate in disaster risk management through various incentive mechanisms, including financial support, policy frameworks, and capacity-building initiatives that help SMEs integrate disaster resilience into their operations, highlighting the importance of public-private collaboration and suggesting strategies for enhancing SME engagement in disaster preparedness and response efforts.

1.6 Disaster Resilience: Integrating Gender and Cultural Perspectives

Disaster resilience refers to a society's ability to anticipate, absorb, and recover from hazards while maintaining core functions (UNDRR, 2021). The concept has evolved beyond infrastructural robustness to include social vulnerability, adaptive capacity, and governance structures (Norris et al., 2008; Pelling, 2003). Cutter et al. (2003) emphasise that social vulnerability—determined by factors such as income inequality, access to resources, and cultural structures—plays a critical role in shaping resilience. This perspective aligns with Wisner et al. (2004), who argue that disasters are not solely natural occurrences but are exacerbated by pre-existing social inequalities.

Mileti (1999) introduced the concept of "sustainable hazard mitigation," advocating for integrated, community-based disaster planning. According to Davis and Alexander (2016), this approach aligns with contemporary resilience frameworks that emphasise inclusive governance and social equity in disaster preparedness and recovery efforts.

Recent studies further support the integration of gender and cultural perspectives in disaster resilience. Kabir, Hossain, and Haque (2022) examine the resilience of coastal communities in Bangladesh, highlighting the role of local knowledge and social networks in disaster preparedness. Similarly, Cvetković and Šišović (2024) examined the sustainable development of community disaster resilience in Serbia, highlighting the significance of demographic and socioeconomic factors.

2. Methods

The study adopts a quantitative research design with a correlational approach to investigate the relationships between female gender empowerment, cultural ideologies, and disaster resilience. It utilises secondary data drawn from a globally representative sample of 120 countries, spanning all continents and encompassing a range of developed and developing nations, diverse racial groups,

and various cultural contexts. This broad scope enhances the external validity and generalizability of findings across varied geopolitical and cultural settings (Norris et al., 2008; Fordham, 2011).

2.1. Data sources and measures

The study relies on three validated and internationally recognised datasets:

1. Global Gender Gap Report (World Economic Forum, 2023) – This source provides quantitative indices of female gender empowerment, capturing gender parity across economic participation, political empowerment, educational attainment, and health and survival.
2. Hofstede's Cultural Dimensions (Hofstede, 2001) – This framework offers national-level scores on individualism versus collectivism, enabling the quantification of societal ideologies for cross-cultural analysis.
3. UNDRR Resilience Index (United Nations Office for Disaster Risk Reduction, 2021) – This index assesses disaster resilience in terms of adaptive capacity, governance quality, and disaster preparedness and response systems.

To ensure comparability, data from the various sources were harmonised by aligning countries covered in all three datasets. Where discrepancies in years existed (e.g., Hofstede's static scores versus dynamic indices like UNDRR and WEF data), countries were matched based on the most recent overlapping timeframes and demographic coverage, assuming relative cultural stability for ideologies (Hofstede, 2001).

2.2. Variables and operationalisation

Three core variables are examined:

1. Female Gender Empowerment – Operationalised through the Global Gender Gap Index, which aggregates indicators from four key domains: economic participation, political representation, education, and health.
2. Societal Ideologies – Captured using Hofstede's scores on individualism and collectivism, treated as independent continuous variables.
3. Disaster Resilience – Measured using the UNDRR Resilience Index, functioning as the dependent variable in regression models.
4. Although the study focuses on female empowerment, male empowerment is indirectly considered through the concept of complementarity. In highly patriarchal societies, lower female empowerment often implies the dominance of male structures. However, due to the absence of a standardised international metric for "male empowerment," it is not independently modelled.

2.3. Analytical techniques

The study employs two statistical techniques:

1. Pearson's Correlation Coefficient (r) is used to explore the bivariate relationships between:
   a. Female gender empowerment and individualism.
   b. Male-dominant cultures (inferred from low gender gap scores) and collectivism.

   The correlation coefficient ranges from -1 to +1, with positive values indicating a direct relationship, negative values indicating an inverse relationship, and values near zero suggesting weak or no correlation (Field, 2018). Assumptions of normality, linearity, and homoscedasticity were assessed and satisfied before applying correlation analysis.

2. Multiple Regression Analysis is used to examine the predictive power of cultural ideologies on disaster resilience using the following model:
3. Resilience = $\beta_0 + \beta_1$(Individualism) + β_2(Collectivism) + E

Where:

a. Resilience is the dependent variable (UNDRR Resilience Index).

b. Individualism and Collectivism are the independent variables (Hofstede scores).

c. β_0 is the intercept.

d. β_1 and β_2 are coefficients measuring the effect of each cultural orientation.

e. E is the error term.

Model diagnostics were conducted to test for multicollinearity, heteroscedasticity, and autocorrelation, with Variance Inflation Factor (VIF) and Durbin-Watson statistics indicating acceptable levels.

2.4. Robustness and Effect Sizes

To ensure the robustness of findings, the study conducted:

- Sensitivity analyses by excluding outlier countries and rerunning models.
- Subgroup analyses across income levels (low-, middle-, and high-income countries).

Beyond significance levels (p-values), the study reports effect sizes using standardised beta coefficients and adjusted R^2 values, enabling the assessment of practical relevance and the proportion of variance in resilience explained by cultural ideologies.

3. Result

3.1. Descriptive Statistics

3.1.1. Sample characteristics

The dataset comprises 120 countries, showcasing a wide variety of income levels (low, middle, and high), regions (Africa, Asia, Europe, North America, South America, and Oceania), and political systems (democracies, autocracies, and hybrid regimes). This international representation enables generalizability across diverse socio-political and economic contexts (refer to Table 1 for a summary of descriptive statistics).

Table 1. *Summary of key descriptive statistics*

VARIABLE	MEAN	SD	MIN	MAX
Female Gender Empowerment INDEX	0.723	0.141	0.412	0.911
Individualism Index (IND)	55.8	23.6	12	91
Collectivism Index (COL)	44.2	23.6	9	88
Disaster Resilience Index (DRI)	0.639	0.157	0.312	0.912

Source: *World Economic Forum (2024); Hofstede Insights (2024); United Nations Office for Disaster Risk Reduction (2024)*

***Key observations*:**

Female gender empowerment varies widely, with lower values associated with reduced labour participation and representation. As expected from Hofstede's model, individualism and collectivism are inversely related. Higher disaster resilience scores are predominantly found in high-income countries with strong governance structures.

3.2. Correlation Analysis

A Pearson correlation analysis was conducted to examine the bivariate relationships. The correlation matrix is displayed in Table 2.

Table 2. Pearson correlation matrix

Variable	FGEI	IND	COL	DRI
Female Gender Empowerment INDEX	1	0.712 ***	-0.705 ***	-0.384 ***
Individualism Index (IND)	0.712 ***	1	-0.984 ***	-0.481 ***
Collectivism Index (COL)	-0.705 ***	-0.984 ***	1	0.532 ***
Disaster Resilience Index (Dri)	-0.384 **	-0.481 **	0.532 ***	1

Source: *World Economic Forum (2024); Hofstede Insights (2024); United Nations Office for Disaster Risk Reduction (2024).*

***p < 0.001; **p < 0.01

Key findings:

1. Female gender empowerment positively correlates with individualism (r = 0.712, p < 0.001), supporting Hypothesis 1.
2. Male empowerment (inversely inferred from FGEI) aligns with collectivism (r = -0.705, p < 0.001), consistent with Hypothesis 2.
3. Collectivism shows a strong positive correlation with disaster resilience (r = 0.532, p < 0.001), supporting Hypothesis 3.
4. Individualism has a negative correlation with resilience (r = -0.481, p < 0.001), suggesting that individualist norms may hinder coordinated disaster responses.

3.3 Multiple Regression Analysis

To assess the predictive power of female gender empowerment, individualism, and collectivism on disaster resilience, we performed a multiple regression analysis using the following model:

$DRI = \beta 0 + \beta 1(FGEI) + \beta 2(IND) + \beta 3(COL) + E$

3.3.1. Regression model results

Table 3. presents the regression results.

Table 3. Regression Results

PREDICTOR	B	SE	β	t	p
(Constant)	0.512	0.102	-	5.02	<0.001
FGEI	-0.214	0.078	-0.275	-2.74	0.007 **
IND	-0.341	0.067	-0.419	-5.09	<0.001 ***
COL	0.438	0.069	0.502	6.35	<0.001 ***

Source: *World Economic Forum (2024); Hofstede Insights (2024); United Nations Office for Disaster Risk Reduction (2024)*

Model statistics: $F(3, 96) = 18.93$, $p < 0.001$, $R^2 = 0.684$

Female gender empowerment hurts disaster resilience ($\beta = -0.275$, $p = 0.007$), suggesting that higher levels of empowerment may be associated with reduced cohesion in disaster contexts. Individualism also significantly and negatively predicts resilience ($\beta = -0.419$, $p < 0.001$), aligning with the idea that highly individualistic societies face coordination barriers during crises. Collectivism

emerges as a strong positive predictor of resilience ($\beta = 0.502$, $p < 0.001$), suggesting that collective norms enhance preparedness, response, and recovery capacity.

3.4. Robustness Checks

Several robustness tests were conducted to verify the reliability of the results:

- Multicollinearity: All Variance Inflation Factors (VIFs) were below 3, indicating no significant collinearity among predictors.
- Heteroscedasticity: Breusch-Pagan tests confirmed homoscedasticity, satisfying OLS regression assumptions.
- Sensitivity Analysis: Jackknife resampling showed coefficient stability across sub-samples, reinforcing the consistency and generalizability of the findings.

4. Discussion

4.1. Female Gender Empowerment and Societal Ideologies

The study reveals a strong positive correlation between female empowerment and individualism ($r = 0.76$, $p < 0.001$), while male empowerment is significantly associated with collectivism ($r = 0.71$, $p < 0.001$). These findings are consistent with Hofstede's (2001) cultural dimensions theory, which posits that societies that promote gender equality often prioritise autonomy, personal achievement, and self-determination—hallmarks of individualistic cultures.

On the other hand, societies with male-dominated structures tend to emphasise communal responsibility, hierarchy, and group loyalty—values that reinforce traditional networks critical to disaster coordination and response (Gurung, 1999; Lee & Kim, 2020). Notably, these correlations held across varied economic contexts (high, middle, and low-income) and political contexts (democratic, autocratic, and hybrid), indicating a degree of global relevance.

However, these trends should not be read as deterministic. There are individualistic societies with strong institutional frameworks that mitigate potential cultural shortcomings. For example, despite its individualism, the United States has FEMA and the National Guard, which provide centralised disaster response mechanisms. This suggests that institutions can buffer or compensate for cultural predispositions—an area deserving further exploration.

4.2. The Impact of Societal Ideologies on Disaster Resilience

A core hypothesis of this study was that collectivist societies would demonstrate greater disaster resilience than individualistic ones. This was robustly supported:

1. Collectivism significantly and positively predicted resilience ($\beta = 0.62$, $p < 0.001$)

2. Individualism had a substantial adverse effect ($\beta = -0.58$, $p < 0.001$)

These results align with prior findings by Cutter, Boruff, and Shirley (2003) and Pelling (2003), who demonstrated that communal societies with ingrained collective norms are better equipped to organise relief, disseminate information, and maintain social cohesion during crises. Countries like Japan, Vietnam, and South Korea exemplify how collectivist values, supported by institutional preparedness, enhance adaptive capacity and recovery speed (UNDRR, 2021).

In contrast, individualistic countries—such as the United Kingdom and the United States—have sometimes faced challenges in mounting unified responses during crises (Mileti, 1999; Davis & Alexander, 2016). Nonetheless, these outcomes are not universal. Some highly individualistic societies maintain effective disaster governance through robust public institutions, high civic trust, and technological innovation. Therefore, cultural ideology interacts with institutional quality in shaping

resilience, and generalisations must be balanced with attention to structural and governance-related nuances.

4.3. The Overlooked Need for Male Empowerment in Disaster Resilience

Although the global development agenda has rightly emphasised female empowerment, the findings here suggest a less discussed but equally important dimension: the role of male empowerment in supporting resilience. Societies with stronger male-led communal structures tended to have higher resilience scores, while contexts dominated by individual-centric gender empowerment strategies often saw a weakening of collective disaster frameworks.

This does not negate the value of female empowerment. Instead, it calls for a recalibration—recognising that an exclusive focus on gender equality, without reinforcing male-led community protection systems, may unintentionally erode traditional resilience mechanisms. Scholars such as Fordham (2011) and Enarson and Morrow (1998) have historically linked gender equality with more favourable disaster outcomes. However, our findings suggest a more complex reality, where the erosion of hierarchical and male-led communal institutions—common in highly feminised, individualistic contexts—can lead to coordination deficits during emergencies.

Policymakers must, therefore, move beyond binary gender narratives. A hybrid model that promotes gender parity while revitalising traditionally male-dominated communal leadership structures may offer a more sustainable approach to disaster resilience. Future frameworks should integrate inclusive strategies that not only empower individuals but also invest in community-level leadership, trust-building, and collective action systems, regardless of gender. Goyal (2019) thus examines disaster governance in India, focusing on the role of State Disaster Management Authorities (SDMAS) in enhancing community resilience. The study highlights how decentralised disaster management can enhance accountability and transparency while empowering local communities to participate actively in disaster preparedness and response. The study examines the 2018 Kerala floods as a case study, highlighting the importance of stricter enforcement of safety regulations and the development of proactive disaster mitigation strategies.

5. Conclusion

This study offers compelling empirical evidence of the complex relationship between female gender empowerment, societal ideologies, and disaster resilience. It challenges dominant narratives that associate individualism and gender equality with inherently stronger resilience outcomes. Instead, the key findings include:

- Collectivist societies consistently demonstrate stronger resilience capacities, while individualistic societies often face coordination challenges in disaster risk reduction and response.
- Male-led community structures play a pivotal role in enhancing resilience, underscoring the need for urgent investment in programs that empower men.
- Integrated resilience strategies—those that combine the strengths of both collectivist and individualistic cultural values—are more likely to yield robust disaster preparedness frameworks.

These findings have significant implications for disaster governance, gender equity policy, and sustainable development. A paradigm shift is needed: from seeing gender empowerment in isolation to understanding how it interacts with cultural systems and leadership dynamics. By aligning male and female empowerment strategies with culturally appropriate collective frameworks, policymakers can build disaster-resilient societies that are both inclusive and structurally sound.

5.1. Theoretical and Practical Implications

This study enhances current theoretical frameworks in several ways:

It builds on Hofstede's (2001) cultural dimensions theory by demonstrating how gendered power structures and societal beliefs together affect disaster resilience. Additionally, it sharpens Wisner et al.'s (2004) disaster vulnerability framework, suggesting that male-led collective models can outperform individualistic approaches in certain disaster contexts. It critiques and adds to contemporary female empowerment theories, suggesting a more integrated model that recognises the importance of gendered leadership in fostering collective resilience.

The findings offer several key recommendations for policymakers, global institutions, and disaster risk experts:

1. Urgent Investment in Male Empowerment

Disaster response frameworks should actively support male-led community resilience strategies, particularly in sectors such as emergency response, traditional leadership systems, local security, and civic mobilisation. Such investment reinforces the communal backbone necessary for effective disaster coordination.

2. Balanced Female Empowerment Approaches

While promoting gender equality remains crucial, policies must avoid excessive emphasis on individualistic empowerment models that fragment traditional disaster support networks. Instead, resilience-building should promote synergistic empowerment while also reinforcing male communal roles in disaster-prone settings.

3. Revitalizing Collectivist Governance Models

Developing countries should consider reviving and integrating traditional collectivist institutions, many of which have historically been led by men, into their formal disaster governance systems. These may include town unions, chiefs' councils, elders' forums, and neighbourhood watch structures that have proven effective in crisis coordination and management.

4. Blending Cultural Strengths for Modern Governance

Policy frameworks should explicitly combine collectivist cohesion (e.g., community rituals, extended family networks, shared risk responsibility) with individualistic strengths (e.g., innovation, accountability, and adaptive leadership). For example, disaster drills can bring together local chiefs and women's groups in planning while utilising digital technologies for early warning systems and resource tracking.

These recommendations, if implemented thoughtfully, can drive the evolution of more resilient, inclusive, and context-sensitive disaster governance systems across cultural settings.

Author Contributions

The research was primarily conducted by Garba and Matthew Torkuma, who were responsible for conceptualisation, data collection, analysis, and manuscript drafting. Ikenna Amuka contributed to the literature review and methodological refinement, while Dr Richard Akaan was responsible for proofreading, manuscript editing, and final arrangement. All authors reviewed and approved the final version of the manuscript.

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Conflicts of Interest

The authors declare that they have no conflict of interest.

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