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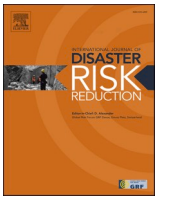

Gendered perceptions of resilience: Understanding of communities' responses to disasters

Lowine S. Hill [a,*], Maria B. Battaglia [b], Sangeeta Mangubhai [c,d], Graham Epstein [b], Margaret Fox [d,e], Waisea Naisilisili [d], Epeli Loganimoce [d,f], Sirilo Dulunaqio [d], Ingrid Qauqau [d]

[a] School of Planning, Faculty of Environment University of Waterloo, 200 University Avenue West, Waterloo, ON, N2L 3G1, Canada
[b] School of Environment, Resources and Sustainability, Faculty of Environment University of Waterloo, 200 University Avenue West, Waterloo, ON, N2L 3G1, Canada
[c] Talanoa Consulting, Suva, Fiji
[d] Wildlife Conservation Society, Fiji Country Program, Suva, Fiji
[e] Pacific Community, Noumea, 98848, New Caledonia
[f] Yatuloa Consulting, Fiji

A B S T R A C T

This study examines the gendered and place-based dimensions of perceived recovery capacity in rural *iTaukei* (Indigenous Fijian) communities following Tropical Cyclone Winston in 2016. Drawing from a resilience framework that integrates social capital and intersectional gender analysis, we use household survey data and a logistic regression to explore how experience, gender, trust, and place-based factors interact to shape perceptions of recovery and adaptive capacity. The findings show that perceived recovery capacity is associated with current household recovery status, community location, and for women, trust in other members of their community. We found that in communities with higher levels of trust, women had greater confidence in their ability to recover from future cyclones. This study therefore contributes to growing debates on gendered resilience by illustrating how trust functions as both a structural and relational enabler of recovery and adaptive capacity. Strengthening social trust, cohesion, and inclusive governance is hence critical to fostering equitable, gender-responsive resilience across Pacific Islands and other small island developing states contexts facing intensifying climate and disaster risks.

1. Introduction

As the climate crisis intensifies, communities around the world face increasingly frequent and severe weather events that threaten the limits of social adaptation [1–3]. The impacts of these events are particularly severe in the Pacific Islands, where cyclones are expected to increase in intensity. Further, these impacts intersect with slow-onset disturbances (e.g. sea-level rise) and other social, ecological, and cultural dynamics to influence the ability of households to rebuild and adapt [2].

Despite these impacts, many Pacific Island societies have traditionally viewed environmental variability and natural hazards as integral and expected aspects of life, to be navigated through collective knowledge, customary practices, and social cohesion [4,5]. In contrast, international frameworks such as the Sendai Framework for Disaster Risk Reduction and the United Nations Framework Convention on Climate Change have emphasized risk reduction mostly through technical and protective measures. In this context, understanding how individuals and communities in Pacific Island societies perceive their capacity to recover from severe weather events is essential, not only as an indicator of adaptive potential, but also, as a critical entry point for co-designing strategies that are

* Corresponding author.
E-mail address: lowine.hill@uwaterloo.ca (L.S. Hill).

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inclusive, equitable, and grounded in local cultural perspectives.

Disasters do not occur in isolation. Rather, they are socially constructed events whose impacts are shaped by pre-existing inequalities and structural vulnerabilities [6,7]. A growing body of research has highlighted that disaster outcomes are not evenly distributed but disproportionately affect those marginalized by their gender, age, marital status, social position, and access to resources or decision-making power [8–15]. These inequalities extend beyond exposure and immediate disaster impacts to shape subsequent recovery pathways through differences in social vulnerability, livelihood disruption, access to resources, and adaptive capacity [16]. Disaster resilience and recovery are therefore inherently uneven processes, shaped by the social positions individuals occupy and the opportunities and constraints associated with them [8,11,13,14,17].

These recovery processes are also context- and relational-dependent, shaped by the intersecting social, cultural, environmental trajectories within which people and communities evolve [18–20]. In particular, gendered social roles and expectations influence how individuals experience, perceive and respond to disasters [8,10,12]. Recognizing the gendered aspects of resilience and recovery is therefore essential for understanding how adaptive capacity is differentially distributed, accessed, and enacted within communities.

However, less attention has been given to how people themselves perceive their capacity to recover from future disasters, particularly in island and Indigenous contexts where recovery is mediated through kinship, customary governance, social cohesion, and place-based relationships [21–23]. While trust and social capital are widely recognized as important to disaster resilience [16,24], less is known about how their influence on perceived recovery capacity is conditioned by gender and the broader social and place-based contexts within which gendered experiences are embedded. In particular, limited research has examined whether and how community trust differentially shapes perception of the ability to recover from future extreme weather events across gender groups, while recognizing that these relationships are also mediated by intersecting social positions and contextual factors. Addressing this gap is important for understanding the relational, gendered, and place-based mechanisms through which adaptive capacity is perceived and enacted in post-disaster Pacific Island contexts.

Against this broader conceptual backdrop, Pacific Island communities, including those in Fiji, offer a critical lens through which the gendered, social, and place-based dynamics of resilience are explored. Tropical Cyclone Winston, a Category 5 cyclone and the most powerful one recorded in the Southern Hemisphere at the time, made landfall in Fiji on February 20, 2016. Affecting approximately 540,400 people (or about 60% of the country's population), the cyclone caused widespread damage to infrastructure, livelihoods, and critical sectors, including fisheries [25,26]. In coastal communities, particularly among rural *iTaukei* (Indigenous Fijian) populations, the cyclone had environmental and material impacts, damaging homes as well as key fishing habitats and equipment [25,27,28]. The cyclone also had both social and psychological impacts, disrupting everyday life, reshaping roles within households and communities, and amplifying existing vulnerabilities [29,30].

To address the aforementioned gap, this paper investigates the factors that shaped perceptions of recovery and resilience in the aftermath of Cyclone Winston, with a particular attention to gender, trust, and social relationships. Drawing on household survey data collected approximately nine months after the cyclone, the study provides a localized and intersectional analysis of recovery in eight rural *iTaukei* communities. It responds to a growing call in the literature to examine the complex, context-specific determinants of adaptive capacity, which remain under-explored, particularly from gendered and localized perspectives [31–33].

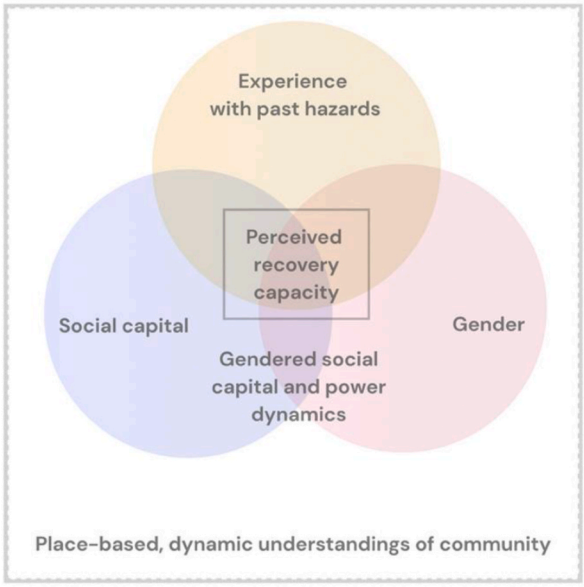

Fig. 1. Conceptual framework of perceived recovery capacity in post-disaster contexts. The framework illustrates how perceived recovery capacity is shaped by past hazard experience, access to social capital, gender, and the interaction between social capital and gender. These relationships are embedded within place-based socio-cultural, and governance contexts.

To guide this research, this paper first outlines a theoretical framework grounded in place-based resilience, social capital, and intersectional gender analysis. This is followed by a description of the analytical approach and key findings. The discussion and conclusion reflect on the implications on how social capital, community networks, and trust influence individuals' perceived ability to recover from future climate-related events. While grounded in the *iTaukei* community context, the insights from this research also speak more broadly to other Pacific Islands as well as Small Island Developing States facing similar ecological and societal challenges.

2. Theoretical framing

In Pacific Islands contexts, where geography, kinship, and customary governance are intertwined, collective narratives of loss and recovery play an important role in shaping how individuals assess their own ability to recover [30]. This study positions recovery as a relational and subjective process that is embedded in trust, identity, and place-based relationships, rather than as an outcome determined by physical exposure to hazards or economic or physical reconstruction. Specifically, in this framework, perceived recovery capacity is conceptualized as an outcome of three interrelated dimensions: (i) experience with past disturbances, (ii) access to social capital, particularly trust and networks, and (iii) gendered structures that condition access to and benefits from these resources. These dimensions do not operate independently but interact to shape how individuals assess their ability to recover from future hazards. Accordingly, the study draws on an integrated theoretical framework (Fig. 1) combining place-based resilience, social capital theory, and an intersectional gender perspective to examine how individuals in *iTaukei* communities perceive their capacity to recover from disasters and other major environmental disturbances.

2.1. Experience and perceived recovery capacity

Experience with past hazards can shape expectations and readiness for future disturbances. Individuals who have successfully navigated disaster recovery may develop knowledge and adaptive behaviors that enhance their sense of agency and confidence [29,34]; . However, the influence of past experience is conditioned by factors such as the scale of damage, institutional support, and the recovery pathways available to individuals and communities. Building on place-based resilience literature [18,35–38], we further recognize that in Pacific Island societies, where risk is often normalized as part of life, lived experiences of hazard exposure are framed through collective narratives, customary practices, and cultural continuity [4,5]. Narratives of recovery are thus shaped by place attachment and relational memory, influencing both perceived and actual resilience to disasters [30,39]. However, experience alone does not determine recovery perceptions. Individuals interpret and act upon these experiences through their social environments, particularly through networks of support and trust.

2.2. Social capital and perceived recovery capacity

Social capital, specifically trust and social networks, plays a critical role in mediating how individuals translate past experiences into perceptions of future recovery. Social capital is defined as the norms, networks, and relationships of reciprocity that enable collective action [24,35]. It encompasses relations of trust, reciprocity, and exchange; the evolution of common rules; and the role of networks [30,40]. Social capital, including networks, can enable collective recovery, particularly when formal support systems do not cover all needs [41,42]. For instance, high levels of trust and social cohesion can lower perceived vulnerability and increase optimism about future recovery by providing emotional reassurance, collective support, and material safety nets during crises [43–45].

Here, trust is understood not just as a social variable but as a central component of adaptive capacity, particularly when formal guarantees are absent and in situations of high uncertainty and unpredictability, such as during disasters [46,47]. Trust fosters cooperation, reduces uncertainty, and enables individuals to draw on shared resources in times of need. In Pacific Island contexts, communal systems of exchange and reciprocity have historically supported resilience [48,49]. This study therefore examines how perceptions of trust and relational security influence individual assessments of recovery capacity. It acknowledges that social capital is both a driver and product of resilience, formed through embedded relationships, shared values, and historical patterns of cooperation. Yet, access to and benefits of social capital are not evenly distributed within communities, and are rather shaped by social structures, including gender.

2.3. Gender and perceived recovery capacity

Gender represents one of the key social structure shaping access to resources, participation in decision-making, and engagement with social networks in post-disaster contexts [12,40,50–53]. Gendered norms influence resilience and recovery capacity, but do not act in isolation. Here, gender refers to the socially constructed characteristics, relations, roles, responsibilities, and practices associated with women, men, girls, and boys in all their diversity, which vary across geographies and contexts [11–13,54,55]. Gendered expectations influence how individuals interpret and respond to disasters, with different gender groups experiencing different opportunities and constraints in mobilizing support and accessing adaptive resources.

This study adopts an intersectional approach to gender (see for instance in Ref. [13,56]), that recognizes how gender interacts with other dimensions of social position and embeddedness. Perceptions of risk and adaptive capacities are thus closely linked to how individuals navigate these structures, how much trust they place in them, and how they draw on their social positions and relationships to access adaptive resources [57]. Recognising these differences is essential for interpreting self-assessed recovery capacity and suggests that the effects of social capital on perceived recovery may be conditioned by gendered roles and differential access to

networks.

2.4. The interactions of gender and social capital

This study explicitly examines the interaction between gender and social capital, proposing that the influence of trust and networks on perceived recovery capacity varies across gender groups. Social capital operates through different forms of bonding and bridging ties, access to and benefits from which may be conditioned by gender (see for instance, Ref. [58]). In *iTaukei* communities, gendered divisions of labour, participation in village governance, livelihood activities, and domestic responsibilities may influence the size, composition, and functions of individuals' social networks. For instance, men, due to their roles in village governance and livelihood structures, tend to maintain larger and more diverse networks (Wildlife Conservation Society, unpublished data). Conversely, women may have more constrained networks due to domestic responsibilities. Yet, when women have access to strong trust-based networks, these relationships may significantly strengthen their perceived recovery capacity [28,30,59]. This proposition is supported by literature showing that adaptive capacity is not equally distributed amongst individuals but is shaped by access to relational and institutional capital, both of which are closely related to gendered norms and power dynamics [29,57], especially in disaster contexts [42]. By examining this interaction empirically, this study contributes to a more nuanced understanding of how trust functions through gendered social processes to shape perceptions of recovery capacity.

2.5. Dynamic understandings of community

This framework challenges static conceptualizations of "community" by recognising communities as heterogeneous and dynamic units composed of interacting social systems [60]. In the context of rural *iTaukei* villages, community members include long-standing residents as well as those who have migrated or married into the community, each with different levels of embeddedness, social ties, and access to recovery pathways. These internal dynamics are shaped by kinship, social obligations, and degrees of trust, affecting both the perceived and the actual capacities to recover. Together, these dimensions – experience, social capital and gender – interact to shape perceived recovery capacity. Situated within dynamic and place-based community contexts, this framework recognizes trust as a relational mechanism through which lived experience and gendered social structures influence perceptions of future recovery. It

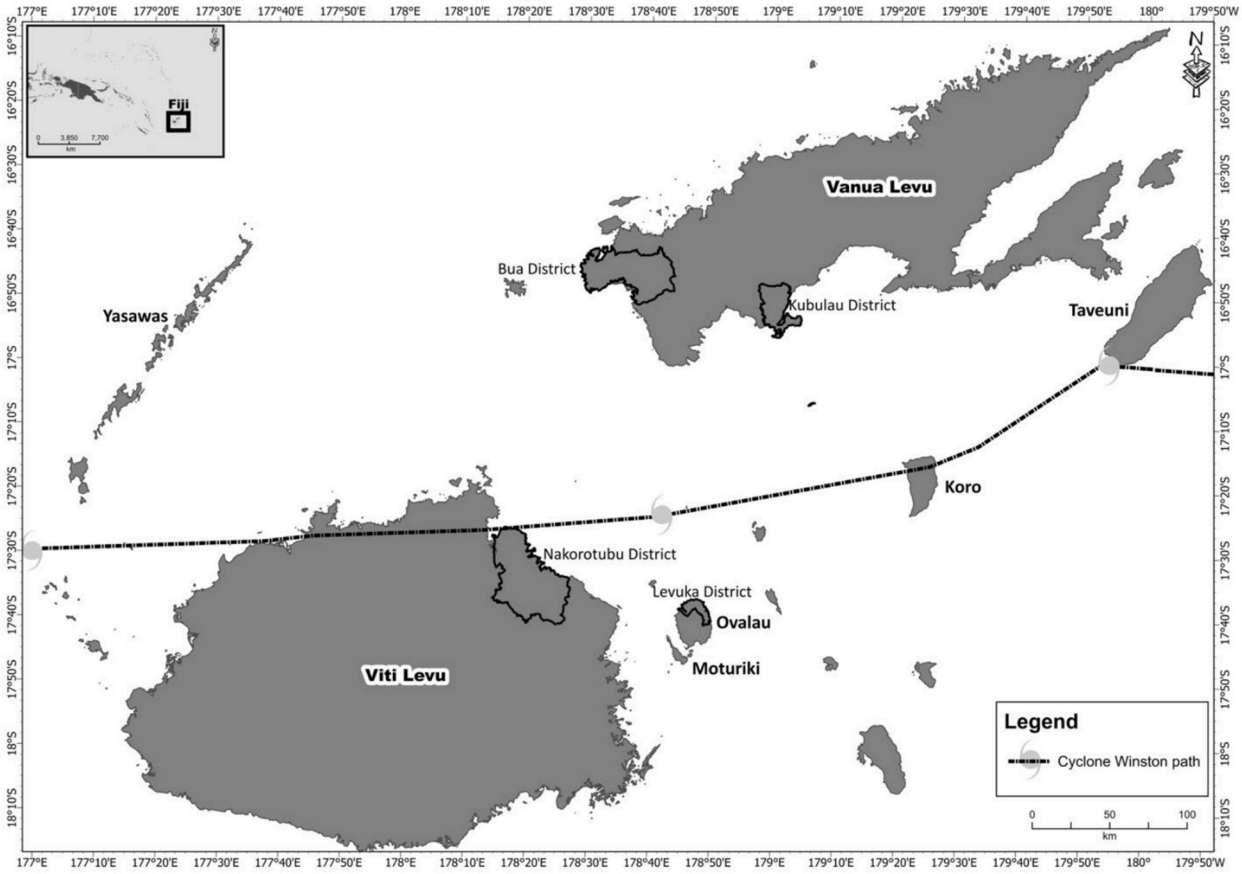

Fig. 2. The surveyed districts to assess the impacts of Cyclone Winston on coastal communities in Fiji (in bold).

therefore provides the conceptual basis for empirically examining how gender conditions the relationship between social capital and perceived recovery capacity in post-disaster contexts in Pacific Island communities.

3. Methods

3.1. Study area

Rural communities in Fiji are vulnerable to cyclones due to their geographic location, dependence on natural resources, and limited access to infrastructure and emergency services [28]. Many villages are situated along the coast or in low-lying areas, making them particularly susceptible to storm surges, flooding, and strong winds. Housing structures in these communities are often made from materials which cannot withstand the intensity of severe cyclones. Livelihoods in rural Fiji are also heavily reliant on agriculture and fisheries, both of which can be devastated by extreme weather events, leading to food insecurity and economic hardship [28].

The data used in this study were collected from eight villages across four districts in Fiji (Fig. 2), each with varying degrees of exposure to and impact from Cyclone Winston. These locations were selected based on their geographic exposure, reliance on fisheries and coastal ecosystems for livelihoods, and the diversity of their post-disaster recovery trajectories [28,61]. Although all villages were affected to some extent, they differed significantly in terms of infrastructure damage, the extent of institutional support received, and the strength of social cohesion. These variations provided a valuable comparative lens to examine how gender, place-based characteristics, and local trust networks shape individuals' perceptions of resilience and adaptive capacity in the aftermath of disasters.

The District of Nakorotubu in Ra Province was the most severely impacted, followed by Levuka in Lomaiviti Province, and Kubulau and Bua districts in Bua Province [25,26] (Table 1). The villages in Nakorotubu District have low population numbers compared to the other villages surveyed and are highly dependent on fisheries and agriculture. The villages surveyed in Levuka District are generally more engaged in agriculture than fisheries and have less diverse livelihoods (e.g., one to two income sources per household). Participating villages in Lekuva District are in close proximity to Levuka town which has a large tuna cannery and better opportunities for salaried employment. In contrast, villages surveyed in Bua District were more remote and had a higher number of household income sources per household.

3.2. Data collection

A semi-structured household survey that combined structured and open-ended questions was conducted in 119 households in four districts between October 22 and November 28, 2016, eight to nine months after Cyclone Winston. Ethics approval was granted by the Wildlife Conservation Society's Institutional Review Board. Prior to data collection, approval was further obtained from the village chief, and traditional *iTaukei* protocols (*sevusevu*) were observed to ensure cultural appropriateness and community engagement.

Households were selected based on availability and people's willingness to participate; hence, they represent a convenience sample. Local researchers with experience working with each of the communities approached potential participants via door-to-door visits. To be eligible, participants had to be the primary head of household (man or woman) and over 18 years of age. In total, 66 women (ages 21–74) and 53 men (ages 25–78) participated in the survey. Each survey was led by a trained local researcher, and it lasted approximately 60 min. Surveys generally took place in the homes of the respondents and in the *iTaukei* language. For individuals who had lost their homes and were residing in temporary shelters, surveys were conducted in locations of their preference, including communal village halls or outdoor spaces. The timing of the data collection was critical, as perceptions of recovery and resilience were likely shaped by the recent disaster experience. Table A1 in Appendix A lists the variables used for this study and the corresponding survey questions used to measure them.

3.3. Data analysis

A logistic regression [62] was used to better understand factors that may influence people's perceived ability to recover from severe weather events. Dependent and independent variables were selected based on our theoretical framework and data availability. Given the small sample size, we adopted a parsimonious modeling approach to avoid overparameterization and reduce the risk of overfitting.

The dependent variable (*FutureRecover)* is measured by asking respondents how they think they would recover in the event of another cyclone. This variable captures people's perceived resilience to future disturbances. To capture recovery experience from severe weather events, the analysis used the current level of household recovery (*CurrentRecover*) as well as residence (*District*) to

Table 1
Ranking of cyclone impacts and number of respondents surveyed by island, province, and district.

Island	Province	District	Respondents surveyed	Cyclone impact ranking
Viti Levu	Ra	Nakorotubu	14 (w), 16 (m)	1
Ovalau	Lomaiviti	Levuka	22 (w), 15 (m)	2
Vanua Levu	Bua	Kubulau	12 (w), 14 (m)	3
Vanua Levu	Bua	Bua	18 (w), 8 (m)	4
			*n = 119; w = women; m = men	*1 = worst

control for structural factors and differences in cyclone exposure. Respondents' gender (*Gender*), their levels of trust in their community (*CommunityTrust*) and community leaders (*LeadersTrust*), and the interaction between gender and trust to capture how the benefits of social capital may be conditional on gender were further included in the model.

Variables originally measured on a five-point Likert scale (i.e., *FutureRecover*, *CurrentRecover*) were recorded into binary outcomes, with the first three responses coded as the reference outcome and the last two as the alternative outcome (refer to Table A1 in Appendix A). The *District* variable was also recorded based on cyclone impact levels (Table 1), grouping Nakorotubu and Levuka districts (impact rankings 1–2) together, and Kubulau and Bua districts (impact rankings 3–4) together. Lastly, a *Trust* variable was created by averaging the scores of *CommunityTrust* and *LeadersTrust*. This approach promotes parsimony and reduces the risk of multicollinearity, given the high correlation between the two variables ($\rho = 0.7$), helping improve the power of statistical tests [63]. The model applied can be expressed as:

$$\Pr(Y = 1) \sim \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \ldots + \beta_n X_n \quad (1)$$

where $Y = 1$ if the respondent believes they would recover better in the event of another cyclone; $\beta_0 \ldots \beta_n$ are the coefficients; and $X_1 \ldots X_n$ are the respondent's characteristics, such as the above-mentioned explanatory variables, including the interaction term. After running a logistic regression, marginal effects were estimated.

4. Results

This section outlines the results of this research. First, section 4.1 provides a brief overview of our sample, highlighting key details for individuals who participated to the survey. Next, section 4.2 presents the results of the logistic regression. The sample used for the analyzes includes 118 individuals as one observation was removed from the dataset due to one respondent not completing the survey in its entirety.

4.1. Profile of survey respondents

Table 2 presents descriptive statistics for the survey sample. Not all variables outlined in the table were later included in the logit model to limit the risk of overparameterization and overfitting. In terms of perceived recovery capacity, approximately 41% of survey participants reported that, in the event of another cyclone, they would expect to recover better, while the rest (59%) indicated that their recovery would be similar, if not worse. As for current status of recovery, about 24% of the respondents reported having mostly or fully recovered from Cyclone Winston, whereas the rest (76%) reported no recovery, or only partial recovery. Regarding geographic distribution, which shaped both respondents' physical exposure to the cyclone path and broader place-based community dynamics, 43% of respondents were from the districts of Bua and Kubulau, the two districts most heavily impacted by Cyclone Winston, while the remaining 57% were from Levuka and Nakorotubu, the two districts least affected by the cyclone. Women accounted for approximately 56% of the sample, and the average age of respondents was 47 years old. Further, the most common primary livelihood was farming (38%), followed by fishing and gleaning (20.34%) and salaried employment (16%), which included occupations such as teaching and nursing. Finally, approximately 64% of sample reported having high levels of trust in their community and community leaders, signalling that the majority of the respondents felt that they had good access to relational security and institutional capital, both of which are key enablers of collective recovery.

Table 2
Descriptive statistics for the survey sample.

Variable	Description	% or Mean	Included in the logit model
FutureRecover	Binary. Respondent believes that they will recover better from future disturbances.	40.68%	✓
CurrentRecover	Binary. Respondent indicates that they have mostly or fully recovered from Cyclone Winston.	23.73%	✓
District	Binary. Respondent is located in a District less exposed to Cyclone Winston (Bua and Kubulau).	43.22%	✓
Gender	Binary. Respondent self-identifies as a woman.	55.93%	✓
Age	Continuous. Age of respondent.	47	
PrimaryLivelihood	Categorical. Primary livelihood of respondent.		
	Farming	38.14%	
	Fishing and gleaning	20.34%	
	Salaried employment	16.10%	
	Other	25.42%	
Trust	Binary. Respondent reports high levels of trust in their community and community leaders.	64.41%	✓

n = 118

4.2. Determinants of perceived recovery capacity to future disturbances

The potential drivers of perceived recovery capacity to future disturbances were analyzed using a logistic regression model. The results of the regression are presented in Table 3 and can be interpreted as follows. If a coefficient is positive and statistically significant it suggests that the corresponding factor is associated with a higher likelihood that the respondent believes they would recover better in the event of another cyclone. Conversely, a negative coefficient indicates that the factor is associated with a lower likelihood of expecting a better recovery. The regression results highlight several factors associated with these perceptions. First, the results suggest that individuals who reported that their household had mostly or fully recovered from the cyclone (*CurrentRecover*), and those residing in the districts least affected by the cyclone (i.e., Bua and Kubulau), were more likely to perceive that their recovery from a future cyclone would be better than their current recovery experience. Second, while *Gender* and *Trust* do not appear to have an independent impact, trust appears to play a role in shaping women's perceptions of recovery. More specifically, women who have high levels of trust in their community and leaders have higher perceived adaptive capacity compared to their counterpart.

Because logistic regression coefficients are difficult to interpret directly, marginal effects were estimated (i.e., average marginal effects and conditional marginal effects) and are presented in Table 4. Marginal effects estimates show that respondents whose households mostly or fully recovered were around 31% more likely to believe they would recover better in the event of a future cyclone. Additionally, respondents from the least affected districts (i.e., Bua, Kubulau) were approximately 33% more likely to anticipate better recovery compared to those from the districts that were impacted the most (i.e., Levuka or Nakorotubu). These findings align with our expectations and theoretical framework: individuals who have successfully navigated past disasters may develop adaptive strategies and experiences that strengthen their confidence in their ability to recover from future disasters. At the same time, direct exposure to hazards remains an important determinant of perceived recovery capacity. Lastly, in contexts where trust is high, women were around 20% more likely than men to expect better recovery. This result suggests that gender differences in perceived recovery capacity emerge in contexts characterized by high levels of trust and that greater relational security strengthens perceptions of adaptive capacity.

5. Discussion

This section discusses how perceptions of recovery from severe weather events in island communities are shaped by the three core dimensions identified in the theoretical framework (i.e., experience with past hazards, access to social capital, and gendered structures), while also examining how these three dimensions interact within place-based contexts specific to *iTaukei* communities in Fiji. The discussion critically reflects on trust as a gendered and contextual enabler of perceived resilience and considers the implications of subjective recovery perceptions in the face of escalating climate risks. Together, these findings advance our understanding of how perceptions of recovery are shaped by lived experience, social relationships, and gendered structures. These insights are situated within broader debates about resilience, agency, and the limits of adaptation, both in Fiji and across other small island developing states.

5.1. Collectively navigated experience

A key focus of the analysis was to explore how past disaster experience can shape confidence in future preparedness and perceptions of resilience to future environmental hazards. The findings of this research showed that respondents who considered their household to be mostly or fully recovered were significantly more optimistic about their ability to recover in the event of another cyclone. In the context of Pacific Islands, prior exposure to cyclones has been shown to enhance both risk awareness and disaster preparedness [64]. In Fiji, this relationship is particularly evident: in a recent follow-up study with *iTaukei* fishers from the Ra Province, participants reflected on their experiences with Cyclone Winston eight years after the event and reported feeling more prepared and more likely to act on cyclone warnings as a result of the lessons learned (S. Mangubhai, unpublished data).

Table 3
Results of the logistic regression.

Variable	Coefficient (SE)
CurrentRecover	1.56*** (0.53)
District	1.61*** (0.46)
Gender	−0.62 (0.75)
Trust	−0.86 (0.65)
Gender & Trust	1.77** (0.93)
Constant	−1.21** (0.55)
Goodness-of-fit statistics	
Log *likelihood*	−61.82
Degrees of Freedom	6
McFadden's R^2	0.22
n = 118	

The significance is reported for the following levels: *p < 0.1; **p < 0.05; ***p < 0.01.

Table 4
Average and conditional marginal effects.

	Average Marginal Effects (SE)
Variable	
CurrentRecover	31.40%*** (0.11)
District	32.58%*** (0.09)
Gender	9.82% (0.08)
Trust	2.30% (0.08)
	Conditional Marginal Effects (SE)
Gender & Trust	20.25% ** (0.09)
n = 118	

The significance is reported for the following levels: *p < 0.1; **p < 0.05; ***p < 0.01.

While previous research has shown that disaster experience can also increase feelings of vulnerability or pessimism, especially when recovery is slow, support is insufficient, or trauma is unresolved [65–68], this pattern was not observed in our study. On the contrary, recent findings suggest that individuals who experienced Cyclone Winston and navigated its aftermath through communal support, social networks, and accumulated knowledge developed greater confidence in their ability to face future events (S. Mangubhai, unpublished results). Rather than increasing feelings of vulnerability, prior exposure may therefore become a source of learning and psychological preparedness when recovery is collectively navigated and supported by social capital. Similarly, research on Cyclone Pam in Vanuatu highlighted mutual aid as a key element of community resilience [69]. Together, these findings suggest that traumatic yet collectively navigated events can catalyze shifts in disaster learning, self-efficacy, and social readiness. In the context of our study, the experience of Cyclone Winston appears to have strengthened perception of preparedness among those able to draw upon communal support and social networks.

Collectively, these insights emphasise the role of lived experience in shaping future recovery perceptions, not only through lessons learned but also through the community relationships and the governance systems through which recovery is navigated. Further, understanding recovery perceptions can expose underlying vulnerabilities that might not be otherwise apparent [45]. In Fiji, where customary institutions, kinship ties, and collective memory remain strong, prior exposure to disaster can act as a foundation for resilience. Overall, these findings are consistent with the theoretical framework and reinforce the view that recovery and adaptive capacity are not simply determined by infrastructure, external aid, or past experience alone, but emerge through the interaction of lived experience with relational and socially embedded processes shaped by trust, cohesion, and culturally grounded coping mechanisms.

5.2. Linkages between location and perception of resilience

The analysis revealed that respondents from the least impacted communities (i.e., Bua and Kubulau) were more likely than residents from the most severely impacted communities (i.e., Levuka or Nakorotubu) to believe that, should another cyclone occur, they would be able to recover better. This variation can be partially explained by the geographical distribution of Cyclone Winston's impacts. Nakorotubu, in Ra Province, was among the hardest-hit areas, with infrastructure damage and production losses in agriculture and fisheries amounting to FJ$ 230.8 million and FJ$ 83.1 million, respectively, totaling FJ$316.9 million [26]. In comparison, Bua and Kubulau, within Bua Province, ranked fourth in terms of total losses, at FJ$151.3 million. Levuka, in Lomaiviti Province, followed closely with losses estimated at FJ$147.8 million [26].

Existing literature shows that the severity of a cyclone's impact influences how individuals perceive their recovery prospects, particularly when communities face significant infrastructural damage and limited institutional support [69,70]. For example, in Nakorotubu District, families were forced to rebuild largely through personal resources given the limited access to disaster insurance among rural *iTaukei* communities. The scale of destruction and the resulting recovery burden may therefore help explain lower perceptions of future recovery capacity. In contrast, Bua and Kubulau, while still affected, experienced relatively less destruction [25,26].

However, differences in cyclone impacts alone do not fully explain the observed variation in perceived resilience. For instance, Levuka, located in the Lomaiviti Province, suffered nearly double the amount of infrastructure damage compared to the Bua Province, where the districts Bua and Kubulau are located [26]. Its distinct socio-economic context may provide additional insight into the observed differences in recovery perceptions. Levuka is a more market-integrated location, which may contribute to its weakening of traditional social safety nets. Increasing market integration, through proximity to trade routes, commercialization, and shifting values toward individualism and democratic governance, can erode the cooperative foundations of traditional *iTaukei* social systems [48]. The monetization of inter-household exchanges, for example, may lead to a decline in informal mutual aid and shared recovery practices that typically strengthen resilience in rural communities [48]. In contrast, more geographically remote areas such as Bua may maintain stronger reciprocal networks and communal norms that foster a sense of collective security and support.

It is important to note that this study did not examine the role of mangrove and vegetation cover, as well as other ecological factors, which are widely recognized as natural buffers against the impacts of cyclones [71–74]. These coastal ecosystems help attenuate storm surges, reduce wind and wave energy, and stabilize shorelines, thereby contributing to both biophysical protection and enhanced

community resilience [71,73,75]. Their presence may therefore also influence community perceptions of safety and recovery capacity following disasters. Among the four study sites, Nakorotubu district had the least vegetation and mangrove coverage. This ecological vulnerability likely exacerbated the community's exposure to Cyclone Winston, which in turn negatively influenced residents' perceptions of recovery. These perceptions were further compounded by limited and delayed post-cyclone external support [22].

These findings reinforce the place-based dimensions presented in the theoretical framework, highlighting how socio-ecological contexts (e.g. market integration, environmental conditions, and governance structures) condition both access to social capital and perceptions of recovery. In short, where people live, and how places are socially and ecologically organized, can matter as much as the level of physical damage experienced by communities.

5.3. Gender, social capital and perceived recovery capacity

The analyzes revealed a significant relationship between gender, social capital, and perceptions of resilience to future events. In the Fijian context, the presence of trust within communities plays a pivotal role in shaping how individuals assess their ability to recover from disasters [76–78]. When community members receive support from others during the response phase, it can generates a positive feedback loop: effective community-led recovery enhances trust in local governance and mutual aid systems, which in turn increases individuals' willingness to engage in future disaster preparedness and response activities [24,30,40].

Contrary to expectations, trust alone did not have a significant independent effect on perceptions of resilience. Nevertheless, the interaction term showed that the relationship between social capital and perceived resilience was conditional on gender. Specifically, women living in social contexts characterized by high levels of trust were more likely to believe they would recover better if another cyclone occurred (Tables 3 and 4). This finding supports the central proposition of the theoretical framework: social capital does not uniformly shape perceived recovery capacity, but its influence is conditioned by gendered social structures and relationships. Trust may function differently across gender lines, amplifying perceived adaptive capacity among women living in high-trust environments [59]. In this context, trust becomes not just an abstract social variable but a relational mechanism that can provide psychological security and facilitate confidence, reciprocity, and proactive behavior [79,80].

The gendered nature of trust must also be contextualized within broader cultural and institutional structures. *iTaukei* communities are hierarchical and patriarchal, with men, especially chiefs and elders, occupying most formal decision-making roles, including those related to post-disaster response and natural resource governance [81]. Within these structures, women may have less formal influence over local governance processes while relying on different forms of informal networks, social relationships, and community support to navigate recovery. The findings therefore suggest that trust can enable women's perceived agency not because of gender per se, but because its effects are mediated through the social environments in which gendered opportunities and constraints are embedded [18,29,50,59].

This interpretation reinforces the place-based dimension of the theoretical framework. Drawing from the place-based resilience research scholarship [4,5,36,38,82], these results show the significance of local contexts in shaping how communities prepare for, respond to, and recover from disasters and other environmental hazards. This distinction is critical because it highlights that trust is neither a universal determinant of resilience nor an inherent gendered attribute. Rather, its effects emerge through the meaning of "place" and the relational and institutional qualities embedded within it. This supports social capital theory, which emphasises that access to networks and trust-based relationships is unevenly distributed and shapes differential capacities to respond to shocks [24,42]. This people-place relationship, as articulated by Berkes and Ross [83], emphasizes that attachment to place is not only emotional but built through shared knowledge, social networks, collaboration, and leadership. These place-based dynamics foster a sense of belonging, which strengthens resilience by cultivating a collective investment in recovery.

Similarly, Reimer et al. [84] identify four normative systems – market, bureaucratic, associative, and communal – that shape disaster responses. Among these, associative and communal systems are most aligned with the kind of trust- and relationship-based dynamics observed in our study. Where community trust is strong, women may be better positioned to mobilize informal networks and resources critical to recovery, especially when relationships of trust have been developed and maintained during "ordinary time" [27,40,59,85]. These networks can act as buffers, particularly when access to formal decision-making spaces or resources is limited by institutional or cultural barriers [81]. Conversely, fragmented social ties or exclusionary decision-making and governance processes may constrain the relational resources available for recovery, even among individuals experiencing similar levels of hazard exposure or material loss [24,41,59].

In summary, these findings support the central proposition of the theoretical framework that perceived recovery capacity is shaped by the interaction between experience, social capital, and gender within place-based contexts. Trust emerges as a key relational mechanism linking social structures to individual perceptions of resilience and may amplify or constrain perceptions of adaptive capacity [39]. In particular, the findings demonstrate that the relationship between social capital and perceived recovery capacity is conditioned by gender, highlighting the importance of socially embedded and context-specific approaches to understanding resilience. Chamlee-Wright and Storr [30] further show that community members' expectations of their own recovery capacity, whether positive or negative, can influence actual recovery trajectories. Positive perceptions of agency and recovery may facilitate action even under difficult conditions, whereas low perceived agency can constrain recovery despite the availability of external resources [30]. Viewed through this lens, trust represents an important mechanism connecting gendered social structures, place-based relationships, and perceptions of future recovery capacity.

6. Implications and concluding thoughts

This research contributes to the growing body of scholarship that centers the gendered and place-based dimensions of resilience and adaptive capacity in disaster-prone contexts. More specifically, this study demonstrates that perceived recovery capacity is not only shaped by individual experience or physical exposure to hazards, but emerges through the relationships between experience, gender, and social capital within place-based contexts. In particular, the findings show that that women in high-trust communities report significantly more confidence in their ability to recover from future cyclones, suggesting that the relationship between social capital and perceived recovery capacity is conditioned by gender and the social environments within which gendered experiences are embedded. By integrating subjective perceptions of recovery with relational and place-based dimensions of adaptive capacity, this research contributes to existing resilience scholarship and provides empirical insights into how experience, social capital, and gender interact in Pacific Island and small islands developing states contexts.

This research raises several conceptual and methodological considerations that warrant attention in future research. First, while the study highlights the relationship between *iTaukei* women's perceived recovery capacity and the trust-based social environments within which they are embedded, it also raises important concerns about the "feminization of vulnerability" narrative [8]. Within this narrative, women are often portrayed as passive victims of disasters, yet the present study highlights the importance of recognizing women's agency within recovery processes. Social capital, mutual aid networks, and place-based trust may provide important relational resources through which women navigate recovery, although access to and benefits from these resources remain shaped by gendered expectations, culturally embedded roles, and structural constraints. Policies and interventions must therefore move beyond paternalistic or reductive framings of gender and instead engage with the complex, dynamic ways through which resilience is socially and culturally constructed.

Second, from a methodological perspective, this research relied on a binary gender framework due to the structure of the survey instrument. However, this approach is insufficient for capturing the full range of gendered experiences, particularly in a Fijian context where gender diversity is culturally recognized. The presence of the *Vakasalewalewa*, a traditional third gender, highlights the need for more inclusive, intersectional, and context-responsive approaches to gender analysis. Emerging research (e.g., Ref. [40,59]) emphasises how individuals who identify outside the binary often play critical but underrecognized roles in recovery processes. Future research should build on this by incorporating frameworks that reflect the fluidity and plurality of gender, particularly in small island contexts where local gender systems may diverge from Western categorizations.

A third and central insight from this study is the role of trust as a normative and relational dimension of perceived resilience, particularly for women in high-cohesion communities. The findings demonstrate that trust is associated with how women evaluate their ability to recover from future hazards. Yet, as climate-related disasters become more frequent, severe, and systemic, the durability of trust as a recovery asset remains uncertain. This raises critical questions about the sustainability of trust-based systems under conditions of repeated shocks, where cumulative stressors may strain social cohesion and erode the very relational structures that support adaptive capacity. Hence, future research should explore how trust is sustained,or eroded, under intensifying environmental and social pressures [86] including climate change, resource scarcity, donor fatigue, and social fragmentation. Moreover, trust must be analyzed beyond the community scale. While this study focused on intra-community trust, broader recovery ecosystems involve multi-scalar relationships, including with national institutions, non-government organizations, customary authorities, and transnational actors. Understanding how trust functions across these levels is essential for designing more responsive and legitimate resilience strategies. Future resilience programming should therefore seek to embed local trust-based mechanisms within broader structural interventions that promote equity, legitimacy, and accountability.

Taken together, these findings point to the need for resilience-building efforts that are intersectional, place-based, and relationally grounded. This implies that disaster risk reduction and climate adaptation strategies should move beyond infrastructure-focused interventions to explicitly invest in strengthening social cohesion, inclusive governance, and locally grounded trust networks. Rather than viewing resilience as a set of technical solutions or individual attributes, this research emphasises the importance of social structure, inclusive governance, and culturally embedded systems of care and support in shaping recovery trajectories. As Pacific Island countries confront escalating climate risks, strengthening these relational dimensions will be critical not only to enhancing recovery outcomes but also to supporting the long-term viability of adaptation strategies.

CRediT authorship contribution statement

Lowine S. Hill: Conceptualization, Formal analysis, Writing – original draft, Writing – review & editing. **Maria B. Battaglia:** Conceptualization, Data curation, Formal analysis, Software, Writing – original draft. **Sangeeta Mangubhai:** Conceptualization, Investigation, Methodology, Supervision, Validation, Writing – review & editing. **Graham Epstein:** Data curation, Supervision, Validation, Writing – review & editing. **Margaret Fox:** Investigation, Writing – review & editing. **Waisea Naisilisili:** Investigation, Writing – review & editing. **Epeli Loganimoce:** Investigation, Writing – review & editing. **Sirilo Dulunaqio:** Investigation, Writing – review & editing. **Ingrid Qauqau:** Investigation, Writing – review & editing.

Declaration of competing interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

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Appendix A

Table A1
Variables and survey questions

Variable	Survey question
FutureRecover	With respect to Cyclone Winston, if it were to happen again in the future how do you think your household would recover? 1 = A lot worse, 2 = Worse, 3 = Same, 4 = Better, 5 = A lot better
CurrentRecover	With respect to cyclone Winston, do you think your household has recovered? 1 = Not at all, 2 = A little, 3 = Halfway through, 4 = Mostly, 5 = Fully
District	Where are you from? District:
Gender	What is your gender?
Age	How old are you?
PrimaryLivelihood	What activities do you do that bring in food or money to your house? (Tick livelihood of respondent, circle their primary livelihood) Fishing and gleaning; Farming; Salaried Employment; Other
CommunityTrust	How much do you trust people in your village? 1 = Not at all, 2 = Distrust more people than trust, 3 = About half-half, 4 = Trust more people than distrust, 5 = Trust all
LeadersTrust	How much do you trust your village leaders? 1 = Not at all, 2 = Distrust more people than trust, 3 = About half-half, 4 = Trust more people than distrust, 5 = Trust all

Data availability

The data that has been used is confidential.

References

[1] F. Berkhout, Social limits to climate change adaptation: temporalities in behavioural responses to climate risks, Curr. Opin. Environ. Sustain. 71 (2024) 101471, https://doi.org/10.1016/j.cosust.2024.101471.
[2] IPCC, Climate Change 2022 – Impacts, Adaptation and Vulnerability: Working Group II Contribution to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change, first ed., Cambridge University Press, 2022.
[3] S. Juhola, M. Heikkinen, T. Pietilä, F. Groundstroem, J. Käyhkö, Connecting climate justice and adaptation planning: an adaptation justice index, Environ. Sci. Pol. 136 (2022) 609–619, https://doi.org/10.1016/j.envsci.2022.07.024.
[4] P.D. Nunn, R. Kumar, H.M. Barrowman, L. Chambers, L. Fifita, D. Gegeo, C. Gomese, S. McGree, A. Rarai, K. Cheer, D. Esau, 'Ofa Fa'anunu, T. Fong, M. Fong-Lomavatu, P. Geraghty, T. Heorake, E. Kekeubata, I. Korovulavula, E. Kubunavanua, M. Waiwai, Traditional knowledge for climate resilience in the Pacific Islands, WIREs Clim. Change 15 (4) (2024) e882, https://doi.org/10.1002/wcc.882.
[5] S. Vunibola, C.L. Tausa, D. Gharbaoui, D. Garcia, S. Ratuva, The concept of Indigenous knowledge and climate resilience in the Pacific, in: A. Penteado, S. P. Chakrabarty, O.H. Shaikh (Eds.), Traditional Knowledge and Climate Change: an Environmental Impact on Landscape and Communities, Springer Nature, 2024, pp. 47–60, https://doi.org/10.1007/978-981-99-8830-3_3.
[6] P. Blaikie, T. Cannon, I. Davis, B. Wisner, At Risk: Natural Hazards, People's Vulnerability and Disasters, second ed., Routledge, 2014. https://www.taylorfrancis.com/books/9781135642723.
[7] A. Oliver-Smith, I. Alcántara-Ayala, I. Burton, A. Lavell, The social construction of disaster risk: seeking root causes, Int. J. Disaster Risk Reduct. 22 (2017) 469–474, https://doi.org/10.1016/j.ijdrr.2016.10.006.
[8] S. Arora-Jonsson, Virtue and vulnerability: discourses on women, gender and climate change, Glob. Environ. Change 21 (2) (2011) 744–751, https://doi.org/10.1016/j.gloenvcha.2011.01.005.
[9] K. Chmutina, J. Von Meding, V. Sandoval, M. Boyland, G. Forino, W. Cheek, D.A. Williams, C. Gonzalez-Muzzio, I. Tomassi, H. Páez, V. Marchezini, What we measure matters: the case of the missing development data in sendai framework for disaster risk reduction monitoring, Int. J. Disaster Risk Sci. 12 (6) (2021) 779–789, https://doi.org/10.1007/s13753-021-00382-2.
[10] H. Djoudi, B. Locatelli, C. Vaast, K. Asher, M. Brockhaus, B. Basnett Sijapati, Beyond dichotomies: gender and intersecting inequalities in climate change studies, Ambio 45 (S3) (2016) 248–262, https://doi.org/10.1007/s13280-016-0825-2.
[11] E. Enarson, A. Fothergill, L. Peek, Gender and disaster: foundations and directions, in: H. Rodríguez, E.L. Quarantelli, R.R. Dynes (Eds.), Handbook of Disaster Research, Springer, New York, 2007, pp. 130–146, https://doi.org/10.1007/978-0-387-32353-4_8.
[12] A.J. Fletcher, More than women and men: a framework for gender and intersectionality research on environmental crisis and conflict, in: C. Fröhlich, G. Gioli, R. Cremades, H. Myrttinen (Eds.), Water Security Across the Gender Divide, Springer International Publishing, 2018, pp. 35–58, https://doi.org/10.1007/978-3-319-64046-4_3.
[13] L.S. Hill, S. Ghorpade, M. Galappaththi, Toward decolonizing sustainability research: a systematic process to guide critical reflections, FACETS 8 (2023) 1–11, https://doi.org/10.1139/facets-2022-0254.
[14] E. Neumayer, T. Plümper, The gendered Nature of natural disasters: the impact of catastrophic events on the gender gap in life expectancy, 1981–2002, Ann. Assoc. Am. Geogr. 97 (3) (2007) 551–566, https://doi.org/10.1111/j.1467-8306.2007.00563.x.

[15] A. Tozier De La Poterie, M.-A. Baudoin, From Yokohama to sendai: approaches to participation in international disaster risk reduction frameworks, Int. J. Disaster Risk Sci. 6 (2) (2015) 128–139, https://doi.org/10.1007/s13753-015-0053-6.
[16] A. Neef, L. Benge, B. Boruff, N. Pauli, E. Weber, R. Varea, Climate adaptation strategies in Fiji: the role of social norms and cultural values, World Dev. 107 (2018) 125–137, https://doi.org/10.1016/j.worlddev.2018.02.029.
[17] D.A. Fordham, T.M.L. Wigley, B.W. Brook, Multi-model climate projections for biodiversity risk assessments, Ecol. Appl. 21 (8) (2011) 3317–3331, https://doi.org/10.1890/11-0314.1.
[18] L.S. Hill, D. Armitage, A.M. Collins, J. Pittman, Principles for the consideration of intersectionality in place-based disaster risk governance in islands, Sustain. Dev. 32 (2) (2024) 1496–1507, https://doi.org/10.1002/sd.2684.
[19] L. Le De, S. Defossez, L. Frédéric, Disaster Resilience of Traditional Societies Disaster resilience of traditional societies from Small Island developing States: the 2015 tropical cyclone Pam in Vanuatu, Int. J. Mass Emergencies Disasters 38 (2021) 373–397.
[20] S. McDonnell, Other dark sides of resilience: politics and power in community-based efforts to strengthen resilience, Anthropol. Forum 30 (1–2) (2020) 55–72, https://doi.org/10.1080/00664677.2019.1647828.
[21] W.N. Adger, J. Barnett, K. Brown, N. Marshall, K. O'Brien, Cultural dimensions of climate change impacts and adaptation, Nat. Clim. Change 3 (2) (2013) 112–117, https://doi.org/10.1038/nclimate1666.
[22] N. Nakamura, Y. Kanemasu, A minority group's response to a severe climatic event: a case study of rural Indo-Fijians after Tropical Cyclone Winston in 2016, Disasters 46 (1) (2022) 206–225, https://doi.org/10.1111/disa.12462.
[23] UNDRR, Disaster Risk Reduction in the Republic of Fiji: Status Report 2019, United Nations Office for Disaster Risk Reduction (UNDRR), 2019. Regional Office for Asia and the Pacific, https://www.unisdr.org/files/68251_682302fijirevised16oct2019.pdf.
[24] W.N. Adger, Social capital, collective action, and adaptation to climate change, Econ. Geogr. 79 (4) (2003) 387–404, https://doi.org/10.1111/j.1944-8287.2003.tb00220.x.
[25] K. Chaston Radway, M. Manley, S. Mangubhai, E. Sokowaqanilotu, W. Lalavanua, A. Bogiva, A. Caginitoba, T. Delai, M. Draniatu, S. Dulunaqio, M. Fox, I. Koroiwaqa, W. Naisilisili, A. Rabukawaqa, K. Ravonoloa, T. Veibi, Impact of Tropical Cyclone Winston on Fisheries-dependent Communities in Fiji, Wildlife Conservation Society, 2016, p. 103. No. 03/16.
[26] Government of Fiji, Fiji post-disaster needs assessment. https://documents1.worldbank.org/curated/en/975781584942869315/pdf/Fiji-Post-Disaster-Needs-Assessment.pdf, 2016.
[27] M. Miyaji, A. Fujieda, S.V. Waqalevu, H. Kobayashi, Challenges for self-recovery from cyclone disasters in a traditional Fijian village: the case of Navala village after tropical cyclone Winston, WIT Trans. Built Environ. 173 (2017) 161–172.
[28] A.S. Thomas, S. Mangubhai, K.C. Radway, M. Fox, S.D. Jupiter, W. Lalavanua, M. Manley, A. Rabukawaqa, Impact of severe tropical cyclone Winston on fisheries-dependent communities in Fiji, Environ. Dev. 54 (2025) 101137, https://doi.org/10.1016/j.envdev.2025.101137.
[29] C. Béné, R.M. Al-Hassan, O. Amarasinghe, P. Fong, J. Ocran, E. Onumah, R. Ratuniata, T.V. Tuyen, J.A. McGregor, D.J. Mills, Is resilience socially constructed? Empirical evidence from Fiji, Ghana, Sri Lanka, and Vietnam, Glob. Environ. Change 38 (2016) 153–170, https://doi.org/10.1016/j.gloenvcha.2016.03.005.
[30] E. Chamlee-Wright, V.H. Storr, Social capital as collective narratives and post-disaster community recovery, Sociol. Rev. 59 (2) (2011) 266–282, https://doi.org/10.1111/j.1467-954X.2011.02008.x.
[31] A. Kaijser, A. Kronsell, Climate change through the lens of intersectionality, Environ. Polit. 23 (3) (2014) 417–433, https://doi.org/10.1080/09644016.2013.835203.
[32] F. Ravera, B. Martín-López, U. Pascual, A. Drucker, The diversity of gendered adaptation strategies to climate change of Indian farmers: a feminist intersectional approach, Ambio 45 (S3) (2016) 335–351, https://doi.org/10.1007/s13280-016-0833-2.
[33] G. Terry, No climate justice without gender justice: an overview of the issues, Gend. Dev. 17 (1) (2009) 5–18, https://doi.org/10.1080/13552070802696839.
[34] J. Tansey, T. O'riordan, Cultural theory and risk: a review, Health Risk Soc. 1 (1) (1999) 71–90, https://doi.org/10.1080/13698579908407008.
[35] W.N. Adger, J. Barnett, F.S. Chapin, H. Ellemor, This must be the place: underrepresentation of identity and meaning in climate change decision-making, Glob. Environ. Polit. 11 (2) (2011) 1–25, https://doi.org/10.1162/GLEP_a_00051.
[36] P. Balvanera, R. Calderón-Contreras, A.J. Castro, M.R. Felipe-Lucia, I.R. Geijzendorffer, S. Jacobs, B. Martín-López, U. Arbieu, C.I. Speranza, B. Locatelli, N. P. Harguindeguy, I.R. Mercado, M.J. Spierenburg, A. Vallet, L. Lynes, L. Gillson, Interconnected place-based social–ecological research can inform global sustainability, Curr. Opin. Environ. Sustain. 29 (2017) 1–7, https://doi.org/10.1016/j.cosust.2017.09.005.
[37] J.R. Masuda, T. Garvin, Place, culture, and the social amplification of risk, Risk Anal. 26 (2) (2006) 437–454, https://doi.org/10.1111/j.1539-6924.2006.00749.x.
[38] P. Balvanera, T.M. Daw, T.A. Gardner, B. Martín-López, A.V. Norström, C. Ifejika Speranza, M. Spierenburg, E.M. Bennett, M. Farfan, M. Hamann, J.N. Kittinger, T. Luthe, M. Maass, G.D. Peterson, G. Perez-Verdin, Key features for more successful place-based sustainability research on social-ecological systems: a Programme on Ecosystem Change and Society (PECS) perspective, Ecol. Soc. 22 (1) (2017), https://doi.org/10.5751/ES-08826-220114 art14.
[39] K. Bergstrand, B. Mayer, "The Community Helped Me:" community cohesion and environmental concerns in personal assessments of post-disaster recovery, Soc. Nat. Resour. 33 (3) (2020) 386–405, https://doi.org/10.1080/08941920.2019.1709002.
[40] L.S. Hill, J. Pittman, D. Armitage, Fostering effective intersectional disaster risk governance in Dominica: the role of social networks and trust in information dissemination, Int. J. Disaster Risk Reduct. 126 (2025) 105612, https://doi.org/10.1016/j.ijdrr.2025.105612.
[41] M.B. Khalil, B.C. Jacobs, K. McKenna, Linking social capital and gender relationships in adaptation to a post-cyclone recovery context, Int. J. Disaster Risk Reduct. 66 (2021) 102601, https://doi.org/10.1016/j.ijdrr.2021.102601.
[42] K. Tierney, Disaster governance: social, political, and economic dimensions, Annu. Rev. Environ. Resour. 37 (1) (2012) 341–363, https://doi.org/10.1146/annurev-environ-020911-095618.
[43] A. Dale, L. Newman, Social capital: a necessary and sufficient condition for sustainable community development? Community Dev. J. 45 (1) (2010) 5–21, https://doi.org/10.1093/cdj/bsn028.
[44] G. Jackson, Perceptions of disaster temporalities in two Indigenous societies from the Southwest Pacific, Int. J. Disaster Risk Reduct. 57 (2021) 102221, https://doi.org/10.1016/j.ijdrr.2021.102221.
[45] L. Jones, T. Tanner, 'Subjective resilience': using perceptions to quantify household resilience to climate extremes and disasters, Reg. Environ. Change 17 (1) (2017) 229–243, https://doi.org/10.1007/s10113-016-0995-2.
[46] J. Edelenbos, E.-H. Klijn, Trust in complex decision-making networks: a theoretical and empirical exploration, Adm. Soc. 39 (1) (2007) 25–50, https://doi.org/10.1177/0095399706294460.
[47] E.-H. Klijn, J. Edelenbos, B. Steijn, Trust in governance networks: its impacts on outcomes, Adm. Soc. 42 (2) (2010) 193–221, https://doi.org/10.1177/0095399710362716.
[48] R. Dacks, T. Ticktin, S.D. Jupiter, A.M. Friedlander, Investigating the role of fish and fishing in sharing networks to build resilience in coral Reef social-ecological systems, Coast. Manag. 48 (3) (2020) 165–187, https://doi.org/10.1080/08920753.2020.1747911.
[49] W. Malherbe, W. Sauer, S. Aswani, Social capital reduces vulnerability in rural coastal communities of Solomon Islands, Ocean Coast Manag. 191 (2020) 105186, https://doi.org/10.1016/j.ocecoaman.2020.105186.
[50] S. Bradshaw, M. Fordham, Double disaster: disaster through a gender lens, in: Hazards, Risks, and Disasters in Society, Academic Press, 2015, pp. 233–251, https://doi.org/10.1016/B978-0-12-396451-9.00014-7.
[51] L. Gahman, G. Thongs, Development justice, a proposal: reckoning with disaster, catastrophe, and climate change in the Caribbean, Transactions of the Institute of British Geographers, tran (2020) 12369, https://doi.org/10.1111/tran.12369.
[52] J.-C. Gaillard, A. Gorman-Murray, M. Fordham, Sexual and gender minorities in disaster, Gend. Place Cult. 24 (1) (2017) 18–26, https://doi.org/10.1080/0966369X.2016.1263438.
[53] U. Guarnacci, Joining the dots: social networks and community resilience in post-conflict, post-disaster Indonesia, Int. J. Disaster Risk Reduct. 16 (2016) 180–191, https://doi.org/10.1016/j.ijdrr.2016.03.001.

[54] B. Agarwal, Conceptualising environmental collective action: why gender matters, Camb. J. Econ. 24 (3) (2000) 283–310, https://doi.org/10.1093/cje/24.3.283.
[55] S. MacGregor, Routledge Handbook of Gender and Environment, Routledge, 2017.
[56] M. Galappaththi, A.M. Collins, D. Armitage, P.K. Nayak, Linking social wellbeing and intersectionality to understand gender relations in dried fish value chains, Maritime Studies 20 (4) (2021) 355–370, https://doi.org/10.1007/s40152-021-00232-3.
[57] A. Garcia, P. Tschakert, Intersectional subjectivities and climate change adaptation: an attentive analytical approach for examining power, emancipatory processes, and transformation, Trans. Inst. Br. Geogr. 47 (3) (2022) 651–665, https://doi.org/10.1111/tran.12529.
[58] I.N.Y. Segara, I.M. Budiasa, I.K.G. Harsana, I.W.G. Lamopia, I.G.N. Jayanti, The cultural universe of the nuaulu tribe: a testament to commitment to Unity, tradition, and mutual trust, J. Ethn. Cult. Stud. 10 (4) (2023) 213–232, https://doi.org/10.29333/ejecs/1862.
[59] K. Bennett, A. Neef, R. Varea, Embodying resilience: narrating gendered experiences of disasters in Fiji, in: A. Neef, N. Pauli (Eds.), Community, Environment and Disaster Risk Management, Emerald Publishing Limited, 2020, pp. 87–112, https://doi.org/10.1108/S2040-726220200000022004.
[60] W.G. Peacock, A.K. Ragsdale, Social Systems, Ecological Networks and disasters: toward a socio-political ecology of disasters, in: Hurricane Andrew, first ed., Routledge, 1997, p. 16.
[61] A.S. Thomas, S. Mangubhai, C. Vandervord, M. Fox, Y. Nand, Impact of Tropical Cyclone Winston on women mud crab fishers in Fiji, Clim. Dev. 11 (8) (2019) 699–709, https://doi.org/10.1080/17565529.2018.1547677.
[62] D.W. Hosmer, S. Lemeshow, R.X. Sturdivant, Applied Logistic Regression, third ed., Wiley, 2013.
[63] J.M. Wooldridge, Introductory Econometrics: a Modern Approach, sixth ed., student edition, Cengage Learning, 2016.
[64] J.L. Demuth, R.E. Morss, J.K. Lazo, C. Trumbo, The effects of past hurricane experiences on evacuation intentions through risk perception and efficacy beliefs: a mediation analysis, Weather Clim. Soc. 8 (4) (2016) 327–344, https://doi.org/10.1175/WCAS-D-15-0074.1.
[65] M. Billman, K. Atoba, C. Thompson, S. Brody, How about now? Changes in risk perception before and after Hurricane irma, Sustainability 15 (9) (2023) 9, https://doi.org/10.3390/su15097680.
[66] W.G. Peacock, S.D. Brody, W. Highfield, Hurricane risk perceptions among Florida's single family homeowners, Landsc. Urban Plann. 73 (2–3) (2005) 120–135, https://doi.org/10.1016/j.landurbplan.2004.11.004.
[67] M. Scovell, C. McShane, A. Swinbourne, D. Smith, Rethinking risk perception and its importance for explaining natural hazard preparedness behavior, Risk Anal. 42 (3) (2022) 450–469, https://doi.org/10.1111/risa.13780.
[68] G. Wachinger, O. Renn, C. Begg, C. Kuhlicke, The risk perception Paradox—Implications for governance and communication of natural hazards, Risk Anal. 33 (6) (2013) 1049–1065, https://doi.org/10.1111/j.1539-6924.2012.01942.x.
[69] M. Yoshioka, Toward the Resilience on Anthropology: the Case of Cyclone Disaster in Vanuatu, 115, Japanese Society for Oceanic Studies, 2017.
[70] A. Zolli, A.M. Healy, Resilience: Why Things Bounce Back, Simon and Schuster, 2013.
[71] W.N. Adger, T.P. Hughes, C. Folke, S.R. Carpenter, J. Rockström, Social-Ecological resilience to coastal disasters, Science 309 (5737) (2005) 1036–1039, https://doi.org/10.1126/science.1112122.
[72] E.B. Barbier, S.D. Hacker, C. Kennedy, E.W. Koch, A.C. Stier, B.R. Silliman, The value of estuarine and coastal ecosystem services, Ecol. Monogr. 81 (2) (2011) 169–193, https://doi.org/10.1890/10-1510.1.
[73] C. Cameron, A. Maharaj, B. Kennedy, S. Tuiwawa, N. Goldwater, K. Soapi, C.E. Lovelock, Landcover change in mangroves of Fiji: implications for climate change mitigation and adaptation in the Pacific, Environ. Chall. 2 (2021) 100018, https://doi.org/10.1016/j.envc.2020.100018.
[74] C.B. Field, V. Barros, T.F. Stocker, Q. Dahe (Eds.), Managing the Risks of Extreme Events and Disasters to Advance Climate Change Adaptation: Special Report of the Intergovernmental Panel on Climate Change, Cambridge University Press, 2012, https://doi.org/10.1017/CBO9781139177245.
[75] J. Devi, E. Holland, Building resilience in a climate crisis: best practices for mangrove restoration along the Coral Coast, Fiji, https://doi.org/10.26021/15186, 2024.
[76] M.S. Akbar, D.P. Aldrich, Determinants of post-flood social and institutional trust among disaster victims, J. Contingencies Crisis Manag. 25 (4) (2017) 279–288, https://doi.org/10.1111/1468-5973.12152.
[77] J.E. Cinner, W.N. Adger, E.H. Allison, M.L. Barnes, K. Brown, P.J. Cohen, S. Gelcich, C.C. Hicks, T.P. Hughes, J. Lau, N.A. Marshall, T.H. Morrison, Building adaptive capacity to climate change in tropical coastal communities, Nat. Clim. Change 8 (2) (2018) 117–123, https://doi.org/10.1038/s41558-017-0065-x.
[78] R. Djalante, C. Holley, F. Thomalla, Adaptive governance and managing resilience to natural hazards, Int. J. Disaster Risk Sci. 2 (4) (2011) 1–14, https://doi.org/10.1007/s13753-011-0015-6.
[79] R.C. Bonfanti, B. Oberti, E. Ravazzoli, A. Rinaldi, S. Ruggieri, A. Schimmenti, The role of trust in disaster risk reduction: a critical review, Int. J. Environ. Res. Publ. Health 21 (1) (2023) 29, https://doi.org/10.3390/ijerph21010029.
[80] E. Fornalé, M. Armiero, L. Odasso, Trust in disaster resilience, Disaster Prev. Manag. 32 (2) (2023) 253–267, https://doi.org/10.1108/DPM-04-2022-0082.
[81] C.E. Ferguson Irlanda, S. Mangubhai, E. Waqa, H. Govan, A. Jagadish, S.E. Lester, M. Mills, M. Tabunakawai-Vakalalabure, A. Tawake, T. O'Garra, Insights on the roles of women in effective and procedurally just environmental governance from coastal fisheries management in Fiji, Conserv. Biol. (2025) e70121, https://doi.org/10.1111/cobi.70121.
[82] C. Helgeson, K. Keller, R.E. Nicholas, V. Srikrishnan, C. Cooper, E.A.H. Smithwick, N. Tuana, Integrating values to improve the relevance of climate-risk research, Earths Future 12 (10) (2024), https://doi.org/10.1029/2022EF003025 e2022EF003025.
[83] F. Berkes, H. Ross, Community resilience: toward an integrated approach, Soc. Nat. Resour. 26 (1) (2013) 5–20, https://doi.org/10.1080/08941920.2012.736605.
[84] B. Reimer, J. Kulig, D. Edge, N. Lightfoot, I. Townshend, The Lost Creek Fire: managing social relations under disaster conditions, Disasters 37 (2) (2013) 317–332, https://doi.org/10.1111/j.1467-7717.2012.01298.x.
[85] J.-P. Mulilis, Gender and earthquake preparedness: a research Study of gender issues in disaster management: differences in earthquake preparedness due to traditional stereotyping or cognitive appraisal of threat? Aust. J. Emerg. Manag. 14 (1) (1999) 41–49, https://doi.org/10.3316/ielapa.395651918909784, 50.
[86] W.N. Adger, S. Dessai, M. Goulden, M. Hulme, I. Lorenzoni, D.R. Nelson, L.O. Naess, J. Wolf, A. Wreford, Are there social limits to adaptation to climate change? Clim. Change 93 (3–4) (2009) 335–354, https://doi.org/10.1007/s10584-008-9520-z.