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Preferences for in-place and relocated living among climate-vulnerable communities in Fiji: a discrete choice experiment

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Abstract

Climate change is forcing difficult choices between in-place adaptation and relocation for Pacific Island communities, yet policy responses often rely on participatory planning frameworks that privilege louder voices or implicitly assume a consensus of preferences. We surveyed 476 adults across 25 at-risk Fijian villages using a discrete choice experiment to understand how individuals evaluate trade-offs between alternative future living arrangements, including location, services, housing, income opportunities, climate risk, and cultural connection. Our analysis identifies three distinct preference types—movers, stayers, and adapters—with sometimes conflicting priorities. While movers and adapters are generally willing to relocate to climate-resilient locations, stayers prefer to remain in their existing villages even in the absence of significant adaptation investment. These divergent preferences reveal relocation and in-place adaptation as spatially constrained and contested choices. Uncoordinated household-level decisions by movers and adapters risk redistributing rural populations across to urban centres and fragmenting communities. Preservation of connection to community and place may therefore require deliberate coordination and compromise at the community level, including the design of new climate-resilient settlements that accommodate the preferences of stayers. Recognising heterogeneous preferences and the limits of consensus-based participation is essential for designing community adaptation pathways that are socially, culturally, and spatially just and acceptable.

Keywords: climate change adaptation; climate-induced relocation; Pacific Island communities; participatory planning; community preferences; discrete choice experiment.

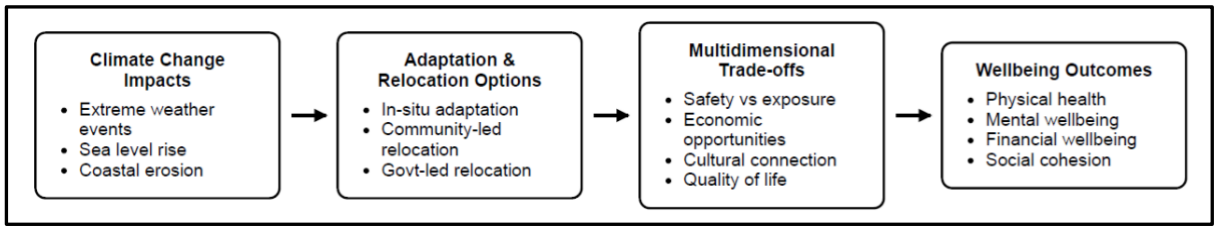
JEL Codes: Q54, R23, Q51, O15, D71

1. Introduction

Climate change is increasingly threatening the lives and liveability of coastal and tidal-river communities in low- and middle-income countries. In the Pacific, Small Island Developing States (SIDS) are especially vulnerable with an estimated 50,000 people each year displaced by climate change and natural disasters (UN, 2021). Rising sea levels, saltwater intrusion, coastal erosion, and increasingly intense storms threaten physical and mental health, homes, livelihoods, and cultural heritage (McMichael, 2023; McNamara, 2021; UN, 2021; World Bank, 2024; WMO, 2025). Slow-onset changes such as temperature rise and altered rainfall patterns disrupt aquacultural and agricultural productivity and food security (UN, 2021; WMO, 2025). For Pacific Island communities, these hazards create difficult choices: remain in place and adapt as resources allow, relocate to less exposed areas, or delay relocation in the hope that current conditions can be maintained.

Decisions between in-place (*in-situ*) adaptation, community-led relocation, or government-led relocation all involve multidimensional trade-offs, balancing safety and hazard exposure, economic opportunities, quality of life and cultural connection. These trade-offs influence physical health, mental wellbeing, and social cohesion (McMichael, 2023; McNamara, 2021; Vinke et al., 2020; World Bank, 2024). Figure 1 provides a simple conceptual framework linking climate change impacts, adaptation and relocation options, multidimensional trade-offs, and wellbeing outcomes.

Figure 1: Conceptual framework linking climate change impacts to wellbeing outcomes



In Fiji – the setting for this study – individual households, whole communities and policy-makers are very much grappling with these trade-offs. Approximately 50 villages have been identified by the Fijian Government for potential relocation within the next 5–10 years, with six relocations already completed (Fiji Climate Change Portal, 2024). Many more communities or households within, will need to implement in-place adaptation measures or consider relocation to cope with the increasing frequency and severity of climate-related disruptions. The Fijian Government has developed Standard Operating Procedures for Planned Relocation (Office of the Prime Minister, 2023) and established the Climate Relocation of Communities Trust Fund. These frameworks emphasise human

rights, cultural preservation, and participatory planning. However, practical implementation remains complex, particularly when community preferences are diverse or do not align well with government or other climate-fundholder preferences with whom there are power assymetries, or when the need for relocation conflicts with strong place-based cultural identities (Bertana, 2020; Bower et al., 2024; Gatiso, 2025; Miller, 2025; Vinke et al., 2020).

These are difficult spatial choices, constrained by social, economic and environmental factors. A crucial challenge for communities, policymakers and development partners is designing adaptation and relocation strategies that are both technically feasible, as well as socially and culturally acceptable (Miller, 2025; World Bank, 2024). While policy frameworks increasingly mandate participatory planning, research on environmental governance reveals a gap between the normative ideals (democratically identifying community preferences) and practitioner realities (Bertana, 2020; Bower et al., 2024; Vinke et al., 2020; Wesselink et al., 2011). Wesselink et al. (2011) argue the rationale for participatory planning has more commonly been 'instrumental' and 'legalistic' focused on smoothing implementation of predetermined goals and ensuring compliance with formal requirements. Moreover, the framing of climate migration (relocation) as 'adaptation' also requires scrutiny (Bower et al., 2024; Vinke et al., 2020). Vinke et al. (2020) argue that when participation falls short of normative ideals, the discourse and process can obscure power asymmetries between government/fundholders and communities, masking non-economic loss and damage of relocating. Indeed, they suggest relocation should not be couched as 'adaptation' if it does not improve the wellbeing of communities.

In the context of decisions to adapt in-place or relocate, this gap between the ideal and reality is particularly consequential. While relocation of households or whole communities has potential to reduce physical exposure to hazards, it may erode cultural identity, fragment community connections, and disrupt access to services and employment opportunities, all of which can exacerbate psychosocial distress (Gatiso et al., 2025; McMichael, 2023; Vinke et al., 2020). Conversely, in-place adaptation may preserve social and cultural ties but leave communities exposed to escalating physical risks and economic hardship if traditional means of income generation are negatively affected by climate change (UN, 2021). Normative participatory approaches are therefore essential for understanding how affected populations prioritise different dimensions for future living situations, so that climate adaptation planning, in-place or not, is effective, equitable and wellbeing improving.

Stated preference methods such as discrete choice experiments are well-suited to this purpose, eliciting a nuanced, quantitative understanding of community priorities and potentially socially acceptable trade-offs in this context. Further, they enable equal weight to participating voices and

importantly identification of heterogeneous preferences, for as Bower et al (2024) argue, communtities are not a “monolith in concensus”. Despite the potential utility of such methods and despite the urgency of the existential crisis, quantitative evidence regarding preferences for in-place adaptation and relocation of climate-vulnerable communities in low- and middle-income countries (LMICs) remains scarce. Most stated-preference research in coastal LMIC contexts has focused on willingness-to-pay for specific environmental protection or hazard mitigation measures—such as mangrove restoration and conservation in Vietnam (Lan et al., 2023; Pham et al., 2018; Tuan et al., 2014) or coastal protection in Brazil (Vásquez et al., 2022) and Malaysia (Ehsan et al., 2022). Similarly, discrete choice experiments (DCEs) in this field have had a relatively specific focus, informing ecosystem-based adaptation in Micronesia (Hagedoorn et al., 2019), flood risk adaptation or coastal protection in Vietnam (Hagedoorn et al., 2021; Nguyen et al., 2021), cyclone warning systems in Bangladesh (Ahsan et al., 2020), and willingness to pay for differing timings and sustained effectiveness of coastal and ecosystem protection measures in Papua New Guinea (Adloff and Rehdanz, 2023).

More relevant to the present study, Kloos and Baumert (2015) take a broader view, exploring preferences for climate change-forced resettlement in Egypt, across a range of life domains, including attributes of public infrastructure, school and healthcare access, housing, financial compensation, social environment and transparency of relocation decision-making. While these attributes are closely related to domains identified by this present study, differences in the risk and nature of climate-events and other attributes of SIDS make it difficult to generalise from findings reported by Kloos and Baumert (2015) to the SIDS setting. Most closely related to the objectives and setting of the present study, Gatiso et al. (2025) recently studied relocation preferences in Fiji, focusing on trade-offs between cultural heritage preservation and access to modern infrastructure and services. They noted the importance respondents place on preservation of culture, but found a willingness to relocate for good quality roads and kindergarten access. Importantly, they identified the presence of significant preference heterogeneity amongst respondents, though a limited sample size constrained analysis of this.

Our study builds on this literature, applying a DCE to quantify the relative importance of location (staying put versus community-chosen or government-chosen relocation) compared with a range of other important life domains. We complement the work of Gatiso et al. (2025) by incorporating a more holistic range of life domains that influence communities’ and individual’s choices for where and how they want to live. These include housing type, frequency of tidal and extreme weather disruptions, food security, income opportunities, service access, traditional roles and cultural connectedness—among residents of highly climate-vulnerable Fijian communities. These attributes were grounded in extensive qualitative fieldwork with community members with support of Fijian

government ministries, ensuring policy relevance and cultural appropriateness. Of particular note, our significantly larger sample size enables more nuanced investigation of preference heterogeneity across Fijian households and communities, and clearer advice to policy-makers regarding how best to reconcile sometimes conflicting preferences.

2. Methods

2.1 Study design

We designed a discrete choice experiment to describe preferences of at-risk Fijian communities for life under in-place and relocated life scenarios. A description of our study setting and sample is provided in Supplementary File S1. Here, we provide a brief description of five essential steps in design and implementation of our DCE: (i) identification of attributes and levels, (ii) experimental design, (iii) survey development, (iv) sample selection and administration, and (v) data analysis. Ethics approval was obtained from the Fiji National University College of Medicine, Nursing and Health Science's College Human Health Research Ethics Committee (CHHREC ID: 137.22).

2.2 Development of the DCE

Identification of attributes and attribute levels

The selection of attributes and levels followed best-practice guidelines for DCEs to ensure included attributes were salient to participants, policy-relevant, and could be traded off against each other (Coast et al., 2012; Lancsar and Louviere, 2008). Specifically, we conducted (i) a search of electronic databases of published peer-reviewed studies, (ii) a review of relevant reports and policy documents identified through consultation with selected Fijian stakeholder organisations, and (iii) a series of focus group discussions with residents of climate vulnerable Fijian communities. Full details are provided in Supplementary File S2 and summarised below.

We searched Web of Science and Scopus (February 2023) for peer-reviewed studies using quantitative stated-preference methods to elicit community priorities for climate adaptation and resilience building in LMIC coastal and tidal-river settings. Supplementary Table S2.1 shows the search strategy. Identified studies helped position this present study in the existing literature, informed potential attributes for consideration in focus group discussions and suggested draft wording of potential attributes and their levels. Stakeholder consultations were held with key agencies including the Ministries of *I-Taukei* Affairs, Rural and Maritime Development, Economy, Environment and Climate Change, and Health and Medical Services, and Fiji Red Cross. The intention of this consultation stage was to identify relevant policy documents, and ensure this study

complemented existing evidence and was relevant for policymakers and community development planners and practitioners.

In September 2023, we conducted nine focus group discussions (FGDs) in four climate-vulnerable coastal or tidal river communities in Fiji's Central Division. The communities were selected to get a mix of coastal-adjacent and tidal-river settings, aquaculture- and agriculture-based, as well as traditional Fijian (*I-Taukei*) and mixed communities. Communities were generally stratified into men, women, and youth (mixed gender, younger adults aged 18+) groups. Using a script (Supplementary File S3), semi-structured discussions were conducted predominantly in Fijian, though some discussions moved between Fijian and English. FGDs first brainstormed issues of importance for in-place adaptation and relocation scenarios. Participants then voted on their top 3 priority issues under four themes of: (i) housing, infrastructure and services; (ii) health, wellbeing and livelihood; (iii) culture and society; and (iv) decision-making and implementation. Votes were tallied to rank each FGD's priorities under each of those themes.

Researchers then collated rankings across FGDs to identify high-priority themes common across gender and age groups. The most consistently prioritised issues, relevant to both relocation and staying put scenarios, were refined into a final set of eleven attributes, each with discrete levels representing realistic and policy-feasible scenarios. Attributes were worded to be understandable to participants and tested in both English and Fijian during piloting. The final attributes and levels are presented in Figure 2.

Figure 2: Attributes and levels included in the experimental design

Attributes	Levels
Location	New climate-resilient location, government chosen
	My village – with minimal climate adaptation
	New climate-resilient location, community chosen
	My village – with significant climate adaptation
Access to fresh & healthy food	Rarely
	Sometimes
	Almost always
Work is	About 2 hrs away
	About 1 hr away
	Near where I live
Job opportunities near home	Only traditional income earning opportunities
	Only labouring/farming for an employer
	Only office or hospitality work
	Mix of opportunities
Proximity to services (e.g., education, health, markets)	About 2 hrs away
	About 1 hr away
	Near where I live
Quality of life	Very expensive & stressful
	A bit expensive & stress
	Affordable & not stressful
Storm & tide disruptions (e.g., utilities, income, mobility)	Most of the year
	4 months of the year
	4 weeks of the year
	4 days of the year
My 2-bedroom home is	A Cat 4-5 house
	Not up to Cat 4-5 code
	An apartment
	A lean-to
Culture and community roles	Traditional
	Modern
I connect with my community (veiwekani)	Every day
	Once a week
	Once a month
	Once a year
I connect with my land	Every day
	Once a week
	Once a month
	Once a year

Note: A Cat 4-5 house is common terminology in Fiji, referring to a house that has been designed and built to withstand Category 4 and 5 rated tropical storms. A "lean-to" is a simple, often informal dwelling built from readily available materials lake locally sourced timber and corrugated iron.

Constructing choice tasks

Our choice tasks entailed a forced choice between two hypothetical, *future* Living Situations (identified as 'Situation A' and 'Situation B' to respondents). Respondents were asked to consider the following hypothetical: '*2 years from now, which situation would you prefer?*'. We specified a 2-year time frame to avoid hypothetical consideration of an unrealistically immediate move (e.g., within 12 months) and to ensure that the costs and benefits of alternative living situations were consequential for respondents who may be advanced in age or nearing other changes in personal circumstance

(potentially leading some respondents to discount or exclude alternatives in the distant future). We evaluated acceptability of the 2-year time-frame during piloting. An example choice task is provided in Figure 3.

Experimental design & survey development

We varied attribute levels across alternatives and choice tasks using a fractional (main effects plus selected interactions), S-optimal design generated using Ngene v1.3.0 (ChoiceMetrics, 2024). Design performance metrics are conditional on *priors* regarding the direction and magnitude of preference parameters. For the majority of attributes, our literature review and FGDs suggested an ordering of attribute levels and we specified small directional prior values for these attributes to indicate the expected ordering. For other attributes, we specified uninformative priors. The design was optimised for estimation of a random parameters panel (RP-panel) model, with levels of *location, connection to community* and *connection to land* specified as random coefficients.

We generated a design with 36 choice tasks, split the design into four blocks of 9 choice tasks, and randomised respondents to complete one of the four blocks. Our final design had a D-error of 1.53 and a minimum required sample size (S-estimate) of n=318.

Figure 3: Example choice scenario

Scenario 1 of 9

Imagine all other aspects of your life are the same for both Living Situations.

2 years from now, which living situation would you prefer?	**Situation A**	**Situation B**
Location	New climate-resilient location, government chosen	My village - with significant climate adaptation
Access to fresh & healthy food	Sometimes	Almost always
Work is	About 2 hrs away	About 2 hrs away
Job opportunities near home	Mix of opportunities	Only traditional income earning opportunities
Proximity to services (e.g. education, health, markets)	Near where I live	About 2 hrs away
Quality of life	Affordable & not stressful	Very expensive & stressful
Storm & tide disruptions (e.g. utilities, income, mobility)	Most of the year	4 months of the year
My 2-bedroom home is	A lean-to	A lean-to
Culture and community roles	Modern	Traditional
I connect with my community (veiwekani)	Once a month	Every day
I connect with my land	Once a month	Every day
Which situation would you chose?	Situation A ☐	Situation B ☐

Sample selection & survey administration

The survey for each respondent included one of the four blocks of 9 choice tasks plus a series of questions regarding the demographic characteristics of respondents and their household, attitudes to climate change and experienced impacts, and details regarding their completion of the survey. The survey was first constructed in English, then independently translated and back-translated into Fijian. We piloted the survey in Fijian with a convenience sample of native speakers drawn from the field team and their family or friends, and in English with members of the field team. The final survey was developed and implemented as hard-copy A5 booklet, for field-team-supported pen-and-paper completion.

A list of around 30 climate-vulnerable, 'at-risk' communities (villages and settlements) across Central Division, with their community contact points, was obtained from the Ministries of Rural & Maritime Development and *I-Taukei* Affairs. These at-risk communties are predominantly *I-Taukei* (indigenous

Fijian). The research team successfully obtained permission from community leaders of 25 of these communities for study participation and secured their assistance in calling a community meeting at which recruitment and field-team-supported participation could take place. A *i-sevusevu* (ceremonial gift) was presented to the village chief or appropriate community leader prior to commencement of participant recruitment in all communities. Where appropriate, provincial government approval was obtained prior to visiting communities.

Recruitment occurred predominantly during field-team-supported sessions, run by at least two members of the field team in Fijian, English or a combination of both according to community preference. Supplementary File S4 summarises talking points for explanation of study objectives, what was required for study participation and regarding how to complete the DCE choice scenarios. Visual aids (laminated A3 posters of simplified choice scenarios) were used to illustrate key talking points.

Participants aged 18 years of age in attendance at field-team-supported sessions were invited to participate in the survey, consented, and then offered the opportunity for further clarification regarding how to complete the DCE choice tasks. Participants' time was acknowledged by receipt of a FJ$10/11 mobile data voucher (value depending on their preferred carrier). We specified a recruitment target of 28 participants per community. In the event that fewer than 28 adults were in attendance at the field-team-supported session, we sought the assistance of community leaders to disseminate 'left behind' survey booklets to reach our target of 28 participants per community. 'Left behind' survey booklets were collected by members of the field team ~2-3 days later.

2.3 Data analysis

To estimate preference parameters, we regressed choice data from the survey on attribute levels from our experimental design using multinomial logit (MNL) and mixed multinomial logit (MMNL) / random parameters models for panel data (RP-panel). We report MNL estimates for reference but, as one of our primary aims is to investigate preference heterogeneity, we rely on MMNL / RP-panel models and latent class (LC) models to characterise preferences and preference-types in the study sample and relevant sub-samples. Fuller discussion of our estimation approaches are provided in Supplementary File S5.

Our LC-panel analyses also allow us to identify 'preference-types' within our sample. For our base LC model, we specified the number of classes based on a comparison of model fit (information criterion) and interpretability across candidate 2-, 3- and 4-class models. LC-panel models were main effects-only models estimated in the main study sample, without adjustment for participant characteristics. Posterior probabilities of class membership for our two- and three-class models were calculated based on the observed sequence of each participant's choices using the post-estimation lclogitpr2 command in STATA (e.g. lclogitpr2 pr2C, class(1 2) cp). These posterior probabilities were used to assign

participants to classes wherein class membership was assumed if the posterior probability of class membership exceeded 0.50 (e.g., C1_member=1 if pr2C1>0.5; C1_member=0 if pr2C1<0.5), and where participants with an equivocal 50:50 probability of class membership were excluded. Predictors of class membership for each class were identified from regressions of this binary indicator of class membership on participant demographic characteristics, attitudes and experience such as climate change worry, survey characteristics such as block and survey language, and response style such as self-reported difficulty rating. All data analysis was undertaken in STATA Version 18 (StataCorp 2024).

3. Results

3.1 Sample

A total of 630 participants in 25 villages / settlements consented to participate in the study and commenced the survey. Of these, 105 participants selected the right-hand side or left-hand side alternative in every choice scenario they completed; suggesting a failure to carefully consider the relative merits of alternative living situations. We excluded these 'straight-liners' from the sample, leaving 525 participants. A further 49 participants selected the right-hand side or left-hand side alternative in all-but-one completed choice scenarios. We also excluded these 'soft' straight-liners from the study sample, leaving us with a main study sample of 4,284 choices from 476 participants in 25 villages / settlements.

Table 1: Characteristics of study sample

Characteristic	Non-missing (%)	Mean (Range) / n / N (%)
Age (years)	455 / 476 (95%)	41.2 (18-89)
Age groups (years)		
18 – 39	455 / 476 (95%)	225 / 455 (49%)
40 – 59		172 / 455 (38%)
60 +		58 / 455 (13%)
Gender		
Woman	464 / 476 (97%)	238 / 464 (51%)
Man		227 / 464 (48%)
Prefer not to say		3 / 464 (1%)
Village / Settlement		
Cautata	476 / 476 (100%)	19 / 476 (4.0%)

Characteristic	Non-missing (%)	Mean (Range) / n / N (%)
Daku		25 / 476 (5.3%)
Koronivia		9 / 476 (1.9%)
Lokia Settlement		25 / 476 (5.3%)
Lokia Village		23 / 476 (4.9%)
Mokani		20 / 476 (4.3%)
Muanaicake		22 / 476 (4.7%)
Nabitu		11 / 476 (2.3%)
Nadaro		23 / 476 (4.9%)
Nadoi		20 / 476 (4.3%)
Naila		4 / 476 (0.8%)
Naimalavau		17 / 476 (3.6%)
Naimasimasi		22 / 476 (4.7%)
Naisausau		23 / 476 (4.9%)
Nakorovou		17 / 476 (3.6%)
Navatuyaba		14 / 476 (3.0%)
Nukui		17 / 476 (3.6%)
Qauia		23 / 476 (4.9%)
Taci		20 / 476 (4.3%)
Tamavua		8 / 476 (1.7%)
Tavuya		25 / 476 (5.3%)
Vaturua		13 / 476 (2.8%)
Veiraisi		28 / 476 (6.0%)
Vunuku		26 / 476 (5.5%)
Wailea		16 / 476 (3.4%)
Years lived in village / settlement	452 / 476 (95%)	28.4 (1-77)
Household size		
1-2 people	455 / 476 (95%)	34 / 455 (7%)
3-5 people		172 / 455 (38%)
6-10 people		222 / 455 (49%)
More than 10 people		27 / 455 (6%)
Owner occupier		

Characteristic	Non-missing (%)	Mean (Range) / n / N (%)
Yes	445 / 476 (93%)	402 / 445 (90%)
No		43 / 445 (10%)
Ethnicity		
I-Taukei	464 / 476 (97%)	449 / 464 (97%)
Other		15 / 464 (3%)
Marital status		
Married / de facto	464 / 476 (97%)	310 / 464 (67%)
Never married		109 / 464 (23%)
Other		45 / 464 (10%)
Education		
No schooling	464 / 476 (97%)	6 / 476 (1%)
Primary school		37 / 476 (8%)
Secondary school		227 / 476 (49%)
Technical college		86 / 476 (19%)
University		102 / 476 (22%)
Other		6 / 476 (1%)
Employment		
Not working	454 / 476 (95%)	152 / 454 (34%)
Student / Community / Home work		127 / 454 (28%)
Part time work (<30 hrs / week)		51 / 454 (11%)
Full time work (>30 hrs / week)		75 / 454 (17%)
Retired		49 / 454 (11%)
Household income, FJD / year		
< $5,000	367 / 476 (77%)	101 / 367 (28%)
$5,000 - $10,000		43 / 367 (12%)
$10,001 - $20,000		37 / 367 (10%)
$20,001 - $30,000		14 / 367 (4%)
> $30,000		15 / 367 (4%)
Not sure		157 / 367 (43%)

Table 1 summarises the demographic characteristics of participants included in our main study sample. Consistent with our objectives, the study sample encompasses potentially important diversity within our target population of adult Fijian residents in communities at-risk of significant climate impacts. Our sample includes small households of singles and couples, as well as single generation family units, and multi-generational households. Males and females are approximately equally represented and we have good representation of young adults (18-39 yrs, 49%), middle aged (40-59 years, 38%) and older adults (60+ years, 13%). The sample also encompasses potentially important diversity with respect to marital status, income, education, employment status, and village tenure/connectedness; though our sample is heavily weighted to respondents nominating *I-Taukei* ethnicity (97%). It should be emphasised that our sample is not intended to be representative of the broader Fijian population. Perhaps as expected, respondents reported a lower income than the national average income (GDP / capita ~FJD 12.7k) and were less likely than the general population to be employed in the formal workforce.

Our survey captured participants' attitudes to and experience of climate impacts for our main study sample (Table S6.1, Supplementary File S6). The majority of our sample were 'very worried about climate change' (50.3%), would be 'unable to afford storm repairs without help' (94%), had experienced home / property / income impacts in last 12 months (63%), and think it 'very likely' or 'possible' that climate change will eventually force their relocation (57%). When combined with information regarding the villages and settlements represented in our study sample (see Table 1), the attitudes and experiences of participants suggest we were largely successful in recruiting respondents from communities at-risk of significant climate impacts.

There was some significant missingness with respect to a small number of participant characteristics questions (e.g., 23% missing on household income and 43% 'not sure'). The sample also includes lower but non-negligible levels of missingness for some participant attitudes and experience (e.g., 7% missing on 'Do you think climate change might one day force you to move to a new climate-resilient location?), and some descriptors of participant response style (e.g., 5% missing on 'Did anyone help you answer the scenario choice questions?').

The majority of our study sample completed the survey in Fijian (85%) rather than English, found completion 'easy' or 'very easy' (55%), and completed the survey without help from anyone else (89%). The majority of respondents completed 'left behind' surveys (55%) rather than during our field-worker-supported sessions (45%) (Table S6.2, Supplementary File S6).

3.2 Preference parameters

Table 2 summarises estimated preference parameters for our study sample for our reference MNL model and our base MMNL / RP-panel model. For our base MMNL / RP-panel model, we model preference heterogeneity for a parsimonious set of random parameters (*location*; *access to fresh & healthy food*) and with all other attributes held fixed. We explore preference heterogeneity across a larger set of attributes in supplementary analyses (Table S6.3, Supplementary File 6).

Estimated preference parameters were consistent across alternative specifications of our MMNL / RP-panel model and also consistent with *a priori* expectations for attributes such as *location* and *storm & tide disruptions*. We see a preference for staying put with significant climate adaptation but participants preferred their own village over a new climate-resilient location, even in the absence of significant climate adaptation. Least preferred was a new climate-resilient location chosen by government (rather than chosen by their community). Similarly, participants preferred living situations with infrequent *storm and tide disruptions* and – though not statistically significant at the 0.05 level in our base model – estimated preference parameters suggest that participants also prefer living situations with better *access to fresh and healthy food* and closer *proximity to services*.

However, we also encountered some unexpected results. We see a surprising indifference to traditional versus modern culture / community roles, connection to land and community, quality of life, quality of housing and income earning opportunities. Of note, results from our base model also confirm the presence of potentially important preference heterogeneity. Preference parameters for the *location* attribute varied significantly across participants within our study sample (e.g., estimated SD: 0.79, 95%CI: 0.58, 1.08 for 'New climate-resilient location, community chosen').

Table 2: Parameter estimates from MNL reference model and base MMNL / RP-panel model

Attribute, ***level***	MNL	MMNL **(RP-panel_2, base model)**	
	Coefficient (SE)	Coefficient (SE)	SD (95%CI)
Location			
New climate-resilient location, govt chosen (ref)	0	0	0
New climate-resilient location, comm chosen	0.592*** (0.23)	0.625** (0.25)	0.79 (0.58, 1.08)
My village – with minimal climate adaptation	1.263** (0.57)	1.239** (0.63)	0.41 (0.24, 0.72)
My village – with significant climate adaptation	1.322*** (0.50)	1.328** (0.56)	0.50 (0.28, 0.89)
Access to fresh & healthy food			
Rarely (ref)	0	0	0
Sometimes	0.665* (0.36)	0.634 (0.40)	0.21 (0.03, 1.71)
Almost always	0.576* (0.34)	0.532 (0.38)	0.11 (0.00, 634.22)

Work is			
About 2 hrs away	0.207* (0.11)	0.221* (0.13)	-
About 1 hr away	-0.058 (0.11)	-0.078 (0.12)	-
Near where I live (ref)	0	0	0
Job opportunities near home			
Only traditional income earning opportunities	0.016 (0.28)	-0.042 (0.31)	-
Only labouring/farming for an employer	-0.145 (0.28)	-0.165 (0.29)	-
Only office or hospitality work	-0.024 (0.29)	-0.091 (0.33)	-
Mix of opportunities (ref)	0	0	-
Proximity to services (e.g. education, health, markets)			
About 2 hrs away	-0.834* (0.50)	-0.863 (0.54)	-
About 1 hr away	-0.280 (0.19)	-0.259 (0.20)	-
Near where I live (ref)	0	0	-
Quality of life			
Very expensive & stressful	-0.133 (0.11)	-0.136 (0.11)	-
A bit expensive & stressful	-0.288 (0.19)	-0.259 (0.20)	-
Affordable & not stressful (ref)	0	0	-
Storm & tide disruptions (e.g., utilities, income, mobility)			
Most of the year	-0.299** (0.13)	-0.336** (0.14)	-
4 months of the year	-0.111 (0.15)	-0.125 (0.15)	-
4 weeks of the year	-0.491** (0.24)	-0.473* (0.26)	-
4 days of the year (ref)	0	0	-
My 2-bedroom home is			
A Cat 4-5 house	-0.118 (0.28)	-0.107 (0.29)	-
Not up to Cat 4-5 code	-0.148 (0.27)	-0.146 (0.29)	-
An apartment	-0.151 (0.13)	-0.190 (0.13)	-
A lean-to (ref)	0	0	-
Culture and community roles			
Traditional	0.002 (0.12)	0.012 (0.12)	-
Modern (ref)	0	0	-
I connect with my community (veiwekani)			

Every day	-0.275 (0.23)	-0.231 (0.24)	-
Once a week	-0.181 (0.18)	-0.126 (0.19)	-
Once a month	-0.237 (0.15)	-0.222 (0.16)	-
Once a year (ref)	0	0	-
I connect with my land			
Every day (ref)	0	0	-
Once a week	0.093 (0.20)	0.045 (0.22)	-
Once a month	0.301 (0.27)	0.268 (0.29)	-
Once a year	0.392 (0.38)	0.328 (0.42)	-
Block			
1 (ref)	0	0	-
2	-0.748 (0.47)	-0.741 (0.52)	-
3	-0.321 (0.30)	-0.357 (0.33)	-
4	-0.193 (0.25)	-0.244 (0.27)	-
Constant	0.111 (0.21)	0.120 (0.22)	-
Log likelihood	-2828.36	-2812.56	
Observations	4,222	4,222	
Participants	476	476	

**** p<0.01, ** p<0.05, * p<0.10.*
MNL = multinomial logit model. MMNL= mixed multinomial logit model. RP-panel = random parameters models for panel data.

3.3 Preference types

Results from MMNL/RP-panel models suggested that preference heterogeneity is pervasive for choice over living situations and evident for several attributes. Latent class (LC-panel) models were employed to identify 'preference-types' within our study sample, holding distinct preferences over alternative living situations.

Measures of model fit for alternative 2-, 3- and 4-class LC-panel models are reported in Supplementary File S6 (Table S6.4). Although the four-class model outperformed the two- and three-class models on BIC, both the two- and three-class models were superior to the four-class model on AIC and CAIC, where CAIC in particular imposes a penalty for model complexity (Bozdogan, 1987). Two-class models sometimes provide an overly simplistic representation of the data, and may provide insufficient information for the design and targeting of policy measures so, for the present study, we report results

for both two- and three-class models but rely primarily on the three-class model when drawing policy recommendations and describing the identified preference types below. Supplementary File S6 reports class-specific preference parameters from our 2- and 3-class LC-panel policy models (Table S6.5) and predictors of class membership (Tables S6.6-7).

Class 1, Movers

Class-specific preference parameters from the 3-class model characterise class 1 respondents as *movers*; with a preference for relocation to a new, government-chosen, climate-resilient location (reference category) as compared to staying put with significant adaption (-0.960, p=0.016). Our movers strongly preferred a Category 4/5 cyclone-resilient house (0.814, p=0.001) or a standard free-standing house (0.732, p=0.003) over an apartment (-0.668, p=0.002) or lean-to (reference category). Movers also preferred a clear avenue to income-earning opportunities near home whether this be traditional income earning opportunities (0.871, p=0.025), labouring/farming work for an employer (0.580, p=0.105) or office or hospitality work (1.148, p=0.057) over an unspecified mix of income-earning opportunities (reference category). Movers also preferred ready access to work near home (reference category) as compared to work about 2 hours away from home (-0.302, p=0.055). For movers, it may be that income-earning opportunities and high-quality housing motivate their preference for relocation.

Oddly, movers hold a preference for more frequent storm and tide disruptions that occur most of the year (0.803, p=0.008), for four months of the year (0.437, p=0.027) or four weeks of the year (0.993, p<0.001) rather than for just four days of the year (reference category); perhaps to provide post-hoc validation for the decision to relocate to a more climate-resilient location.

Movers also hold a weak preference *against* access to fresh and healthy food ('sometimes': -0.324, p=0.147), in *favour* of a more expensive and stressful life ('very expensive and stressful': 0.227, p=0.155) and against traditional culture / community roles (-0.363, p=0.046); perhaps suggesting an aspirational preference for a modern, high-income, high-consumption (e.g. of processed foods) lifestyle and a faster pace of life. This may also explain their preference for office or hospitality work (1.148, p=0.057).

Interestingly, movers prefer to maintain semi-regular connection to land ('yearly connection': -1.646, p<0.001 versus daily connection (reference category)) and community ('monthly connection': 0.321 versus 'weekly connection: -0.672, p<0.01) and a degree of separation from urban development ('services about 2 hrs away': 1.055, p<0.001). Movers accounted for 46.7% of our study sample.

Predictors of class membership for class 1 were identified from regressions of a binary indicator of class membership on participant demographic characteristics, attitudes / experience, survey

characteristics, and response style. Supplementary Tables S6.6 and S6.7 report results from a parsimonious model and an extended model for 3- and 2-class models respectively. Interestingly, Class 1 respondents (movers) from the 3-class model were less likely to be worried about climate change (-0.260, p=0.085) and less likely to expect to have to move in the future due to climate impacts (-0.591, p=0.022). Movers may therefore hold a preference for relocation but may not expect to have to do so anytime soon.

Class 2, Stayers

Preference-parameters from our 3-class model characterised class 2 respondents as *stayers*; with a preference for *in situ* adaptation (2.102, p<0.001) and a preference for staying put in their existing village (2.326, p<0.001) over a new, government-chosen climate-resilient location (reference category); even in the absence of significant climate adaptation. Our stayers also preferred relocation to a community-chosen location (0.788, p=0.002) over relocation to a government-chosen location. Stayers accounted for 34.9% of the study sample and – of the three classes identified by our 3-class model – hold preferences most similar to the average relocation and adaptation preferences of our full study sample.

Stayers preferred regular but not necessarily frequent connection to land ('once a month': 0.599, p=0.077 and 'once a year': 1.172, p<0.001 as compared to 'every day': reference category) and regular *and* frequent connection to community ('once a week': 0.478, p=0.083 versus 'once a month' : -0.934, p<0.0001). Stayers also held a relatively strong preference for traditional culture / community service roles colloquially known as *veiqaravi vaka vanua* (1.004, p<0.001) and to keep work at a distance ('work about 2 hrs away': 0.539, p<0.001). With regards to income-earning opportunities, stayers preferred a mix of income-earning opportunities (reference category) as compared to being limited to *only* traditional income earning opportunities (-1.979, p<0.001) or labouring/farming for an employer (-2.357, p<0.001). With regards to housing, stayers were less receptive to living situations that offered more modern housing ('Category 4-5 house': -1.233 versus 'Not up to Cat 4-5 code': -0.253, p<0.001); perhaps due to the degree of disruption required to upgrade. Interestingly, stayers were more open to apartment living (0.532, p<0.05), perhaps as an urban base that would permit a weekly (rather than daily) commute to employment in urban centres.

Stayers also preferred easy access to fresh and healthy food ('almost always': 1.092, p<0.001), easy access to services ('services about 2 hrs away': -2.198, p<0.001 as compared to near where I live), an affordable and stress-free life ('very expensive and stressful': -0.572, p=0.008), no storm/tide

disruptions ('4 weeks of the year': -1.479, p<0.001), consistent with a preference for maintaining village life.

Based on class membership models reported in Supplementary Table S6.6, Class 2 respondents (stayers) were more likely to be from a small 1- or 2-person household (Base model: 0.880, p=0.030; Extended model: 0.685, p=0.128) and more likely to expect to have to move in the future due to climate impacts (Extended model: 0.844, p=0.002).

Class 3, Adapters

Class 3 respondents, accounting for 18.4% of the sample, differed in several important respects from Class 1 and Class 2 respondents. Class 3 respondents demonstrated perhaps the greatest willingness and flexibility in adapting to climate change. These Class 3 *adapters* held a strong preference for their existing village with significant climate adaptation (2.664, p<0.001) but they also preferred a new climate-resilient location chosen by their community (1.372, p=0.003) over either their existing village with minimal climate adaptation (0.836, p=0.173) or a new climate-resilient location chosen by government (reference category). Consistent with their focus on adaptation, class 3 adapters preferred to avoid frequent storm and tide disruptions ('4 months of the year': -2.426, p<0.001 as compared to '4 days of the year').

Our adapters were indifferent to access to work ('work is about 2 hrs away': 0.341, p=0.391) but held strong preferences for higher quality housing (e.g. 'category 4-5 house': 3.539, p<0.001; 'apartment': 1.309, p=0.009 as compared to lean-to) and access to services ('services about 1 hr away': -1.370, p<0.001 as compared to 'services near where I live') and wanted to maintain an affordable and stress-free life ('bit expensive and stressful': -1.922, p<0.001) with job opportunities near home ('traditional income earning opportunities': 2.196, p<0.001; 'labouring/farming for an employer': 4.131, p<0.001).

Interestingly, our adapters held an aversion to frequent connection to community ('once a day': -1.696, p<0.001) and land ('once a week': -2.635 as compared to 'once a year': 0.650, p<0.001) and to traditional culture / community service roles (-1.174, p<0.001); perhaps suggesting a willingness to consider a weekly (rather than daily) commute from a new, community-chosen location.

Based on class membership models reported in Table S6.6, Class 3 respondents (adapters) were younger (Base model: -0.019, p=0.090), less likely to be highly educated (Extended model: -0.592, p=0.095), more likely to be worried about climate change (Extended model: 0.364, p=0.092), more likely to have completed the survey on their own without the support of friends, family or others from their community (Extended model: 1.259, p=0.055).

4. Discussion

4.1 Main findings

Participatory planning has been widely institutionalised in climate adaptation on environmental justice grounds (Office of the Prime Minister of Fiji, 2023; Wesselink et al., 2011). Yet participatory processes often operate within—and reproduce—existing power asymmetries between communities and governments or climate funders, as well as within communities themselves (Bertana, 2020; Bower et al., 2024; Wesselink et al., 2011). These dynamics complicate efforts to identify adaptation or relocation priorities that reflect the heterogeneous preferences of climate-vulnerable communities in LMIC settings. Evidence from Fiji's Vunidogoloa relocation illustrates how participatory processes privileged established authority structures, marginalising the voices of women and non-elders (Bertana, 2020). As a result, dominant accounts of "community preferences" may mask important within community preference heterogeneity that is central to fair and effective adaptation planning.

Despite growing recognition of these issues, relatively little is known regarding the types of trade-offs considered socially and culturally acceptable to communities facing significant climate-related impacts and this is particularly the case for relocation decisions in LMIC settings. Kloos and Baumert (2015) described preferences for climate-change-forced resettlement in coastal communities (Alexandria, Egypt); quantifying trade-offs across a relatively complete set of life domains that included public infrastructure, school and healthcare access, housing, financial compensation, social environment and transparency of relocation decision-making. While the trade-offs considered by Kloos and Baumert (2015) have much in common with those considered in the present study, there are important differences between the small coastal and tidal-river communities included in our sample and the sample and setting considered in the Kloos and Baumert (2015) study. Gatiso et al. (2025) conducted a choice experiment in a sample of 100 participants from 10 coastal Fijian communities to understand trade-offs between preservation of cultural heritage and access to modern infrastructure; finding that relocation to distant locations *with limited access to cultural heritage* may be acceptable if relocation scenarios involve quality roads and/or a kindergarten. While Gatiso et al. (2025) make an important contribution to the literature, including identifying the presence of preference heterogeneity, their small sample size limited the extent to which this could be investigated and precluded identification of distinct 'classes' or 'types' with different (and potentially opposing) preferences for relocation and adaptation.

The present paper is the first to identify distinct preference types for relocation and adaption in communities at risk of significant climate-related impacts in an LMIC setting. To do so, we employed gold standard methods for attribute development to develop a discrete choice experiment (DCE)

capable of quantifying trade-offs across a comprehensive range of life domains that influence people's choices for where and how they want to live. This set of domains included housing type, frequency of climate change-related environmental disruptions, food security, income opportunities, traditional roles and cultural connectedness, and service access. We then used this DCE to elicit preferences in a large (n=476) and diverse sample of Fijian adults drawn from 25 climate-vulnerable coastal or tidal river communities.

Our results suggest that – on average – communities preferred *in situ* adaptation over relocation and to stay put in their own village *even in the absence of significant climate adaptation*. In the event that relocation to a new climate-resilient location becomes necessary, communities want to select this new location rather than for government to dictate a location. When we limit our analysis to averages, we also found a surprising indifference to traditional versus modern culture / community roles, connection to land and community, quality of life, quality of housing and income earning opportunities. However, this conceals important heterogeneity in preferences for relocation and adaptation.

Our latent class analysis identified three distinct preference 'types' with different (and, in some cases, opposing) preferences for relocation and adaptation:

- **Class 1, Movers**: preferred relocation to a new, *government-chosen*, climate-resilient location over *in situ* adaptation.
- **Class 2, Stayers**: preferred *in situ* adaptation but would also rather stay put in their existing village *without* significant climate adaptation than relocate to a new climate-resilient location.
- **Class 3, Adapters**: preferred *in situ* adaptation but they also preferred new climate-resilient location chosen by their community over either their existing village with minimal climate adaptation or a new climate-resilient location chosen by government. Consistent with this preference for taking action (either *in situ* or by selecting a new, climate-resilient location), adapters were more likely to be worried about climate change than our movers or stayers.

Despite evidence of pervasive preference heterogeneity, we were unable to identify a class or preference 'type' for whom doing nothing (own village with minimal climate adaptation) was significantly more preferred than either relocation or adaptation. This is consistent with a sample in which majority of respondents were 'very worried about climate change', would be 'unable to afford storm repairs without help', had experienced home / property / income impacts in last 12 months, and believed that climate change would eventually force their relocation.

Our results provide further insights into preferences over a broader set of attributes for alternative living situations and demonstrate both the complexity of the trade-offs at play and the extent to which preference heterogeneity bears upon these complex trade-offs. For example, whereas stayers

preferred to maintain traditional culture / community roles (colloquially known as *veiqaravi vaka vanua*), both movers and adapters held an aversion to these same roles and this aversion was particularly strong among adapters. This heterogeneity was also evident for connectedness to community (*veiwekani*). For connection to community, two distinct sub-groups in our sample (movers and adapters) held relatively strong aversion to daily or weekly connection to community (as compared to monthly or yearly connection).

This is in contrast to previous studies (Gatiso et al., 2025) that typically describe trade-offs across a relatively narrow set of attributes (burial ground relocation: Yes / No; whole community relocation: Yes / No; kindergarten: Yes / No; type of road connecting new village with nearest town: No road / Dirt road / Gravel road / Sealed road; distance from current village to new village: 1km / 5km / 10km / 15km; labour contribution to construction: 0 hrs per week / 5 hrs / 10 hrs / 15 hrs) that were specified based on existing policy or programs (rather than based on attribute development with at-risk communities). Our results nonetheless serve as a robustness check on findings reported in these previous studies. For example, Gatiso et al. (2025) found that "distance between new and old villages emerged as a critical factor in attitudes towards relocation" and noted that the "preference for proximity underscores the importance of maintaining an attachment to one's place". Our attribute development process identified several important dimensions associated with but potentially separable from place (e.g., connection to land, connection to community, access to fisheries and other traditional income-generating activities, access to fresh and healthy food). When these attributes were separately specified in our experimental design, two distinct sub-groups in our sample (movers and adapters) were content to maintain a weaker connection to community and land.

The present study also provides a more granular description of preferences than previous studies as a result of (i) our comprehensive set of potentially relevant attributes (e.g., including quality of life, income-generating opportunities, and cultural connection, (ii) finer-grained specification of attribute levels (e.g., with respect to housing and location), and (ii) use of latent class modelling. This more granular description of preferences facilitates 'what if' scenario analyses. If, for example, stayers' current living situation entailed poor (*2 hrs away*) access to services (utility decrement of -2.198), very expensive and stressful quality of life (utility decrement of -0.572) and frequent (*most of the year*) storm and tide disruptions (utility decrement -2.127) then improvements on these dimensions could yield a utility gain well in excess of the utility *loss* associated with relocating to new government-chosen climate-resilient location. Put simply, despite their strong preference against relocation, even stayers would be willing to relocate for compensatory improvements on other dimensions of future living situations. Whether or not such improvements are obtainable at a given point in time depends upon the specifics of an individual's living situation at that time (e.g. quality of life, frequency of storm and tide disruptions, access to services from their existing village), and the political context

determining whose preferences are prioritised in setting the specifics of proposed climate-resilient locations and accompanying investments in services, infrastructure investments and job-creation initiatives (Bertana, 2020; Wesselink, 2011).

4.2 Limitations

Our study is not without limitations. While we were successful in recruiting a large and diverse sample (n=476) from 25 climate-vulnerable coastal or tidal river communities, all of these communities were located in Central Division and so a degree of caution should be exercised in generalising from our findings to draw conclusions regarding the preferences of at-risk communities elsewhere in Fiji and in other (e.g. non-coastal/tidal river) settings.

Second, we provided respondents with the opportunity for field-team-supported completion but community visits (field-team-supported sessions) were typically completed on weekdays during working hours and we fell short of our target of 28 completions per community from field-team-supported sessions. As a result, a relatively high proportion of respondents completed a 'left-behind' survey outside of field-team-supported sessions.

Third, we encountered a relatively high proportion of 'straight-liners' whose choices were unlikely to reflect a considered reflection on the relative merits of alternative living situations. Exclusion of these straight-liners (and 'soft' straight-liners) resulting in a reduction of our sample from n=630 to n=476 participants; still well in excess of the s-estimate for our experimental design of n=318. The majority of our final study sample of n=476 found completion 'easy' or 'very easy' (55%), and completed the survey without help from anyone else (89%).

Finally, our study sample was subject to missingness on a small number of participant characteristics. To avoid loss of sample size when estimating class-specific utility functions, we estimated latent class models on the full sample (n=476) with an empty class membership equation. Predictors of class membership were then identified by regressing indicators of class membership constructed from posterior probabilities of class membership on recipient characteristics, with some loss of sample size for larger specifications.

5. Conclusion

Communities face difficult choices: stay and adapt, relocate, or defer relocation—each with significant implications for health and well-being. While participatory planning frameworks are intended to support collective decision-making around these constrained spatial choices, our findings highlight the extent to which "community preferences" differ. Ours is the first study to

segment at-risk communities based on participants' distinct (and sometimes opposing) preferences for relocation and adaptation. While the majority of our sample (movers and adapters) were willing to consider relocation to a new climate-resilient location, a significant minority of our study sample (34.9%) were stayers who would rather remain in their existing village *without* significant climate adaptation than relocate to a new climate-resilient location.

Heterogeneous preferences for stay and adapt, relocate, and commute raise the potential for fragmentation and the 'hollowing out' of communities, as movers and adapters may make individual or household-level relocation decisions, leaving stayers behind. These dynamics underscore the limits of participatory processes that assume consensus or privilege dominant voices, particularly in high-stakes adaptation contexts. Proactive management of adaption or relocation by communities or governments to – *inter alia* – identify suitable community-chosen locations, move the community *en masse*, and/or accelerate the pace of *in situ* adaptation will likely be required to obtain a socially and culturally acceptable resolution to these difficult choices.

6. References

Adloff S and Rehdanz K (2023) Wait and see? Public preferences for the temporal effectiveness of coastal protection. *Ecological Economics* 204:107634, https://doi.org/10.1016/j.ecolecon.2022.107634

Ahsan N, Khatun A, Islam S, et al. (2020) Preferences for improved early warning services among coastal communities at risk in cyclone prone south-west region of Bangladesh. *Progress in Disaster Science* 5:100065 *https://doi.org/10.1016/j.pdisas.2020.100065*

Bertana A (2020) The role of power in community participation: Relocation as climate change adaptation in Fiji. *Environment and Planning C: Politics and Space* 38(5), 902-919.

Bower E, Harrington-Abrams R and Priem B (2024). Complicating "community" engagement: Reckoning with an elusive concept in climate-related planned relocation. *Global Environmental Change* 88: 102913.

Bozdogan H (1987) Model selection and Akaike's information criterion (AIC): The general theory and its analytical extensions. *Psychometrika* 52(3):345-370.

ChoiceMetrics (2024) 'Ngene', viewed 12 December 2023, <https://www.choice-metrics.com/>

Coast J, Al-Janabi H, Sutton EJ, et al. (2012) Using qualitative methods for attribute development for discrete choice experiments: issues and recommendations. *Health Economics* 21:730-741. https://doi.org/10.1002/hec.1739

Ehsan et al. 2022. Assessing household perception, autonomous adaptation and economic value of adaptation benefits: Evidence from West Coast of Peninsular Malaysia. *Advances in Climate Change Research. https://doi.org/10.1016/j.accre.2022.06.002*

Fiji Climate Change Portal (2024) Information Sharing Session on Climate Relocation of Communities (CROC) Trust Fund - Fiji Climate Change Portal (FCCP). https://fijiclimatechangeportal.gov.fj/information-sharing-session-on-climate-relocation-of-community-croc-trust-fund/

Gatiso TT, Greenhalgh S, Korovulavula I. et al. (2025) Climate change-induced relocation dilemma between preserving cultural heritage and embracing modern infrastructure: insights from Fijian coastal villages. *Climatic Change* 178:131 https://doi.org/10.1007/s10584-025-03972-x

Hagedoorn LC, Brander LM, van Beukering PJH, et al. (2019) Community-based adaptation to climate change in small island developing states: an analysis of the role of social capital. *Climate and Development* 11(8):723-734 https://doi.org/10.1080/17565529.2018.1562869

Hagedoorn LC, Bubeck P, Hudson P, et al. (2021). Preferences of vulnerable social groups for ecosystem-based adaptation to flood risk in Central Vietnam. *World Development* 148:105650. *https://doi.org/10.1016/j.worlddev.2021.105650*

Lancsar E and Louviere J (2008) Conducting Discrete Choice Experiments to Inform Healthcare Decision Making. *PharmacoEconomics* 26(8): 661-677. https://doi.org/10.2165/00019053-200826080-00004

Kloos J and Baumert N (2015) Preventive resettlement in anticipation of sea level rise: a choice experiment from Alexandria, Egypt. *Natural Hazards* 76:99-121. *https://doi.org/10.1007/s11069-014-1475-y*

Lan BTH, Phuong TTL, Dat TT et al. (2023) Payment for urban mangrove forest conservation in Vietnam: a community case study of Can Gio Biosphere Reserve, Ho Chi Minh City. *Sustainability* 15(13):10299. https://doi.org/10.3390/su151310299

McMichael C (2023) Climatic and environmental change, migration, and health. *Annual Review of Public Health* 44:171-191. https://doi.org/10.1146/annurev-publhealth-071421-045148

McNamara KE, Westoby R, Clissold R et al. (2021). Understanding and responding to climate-driven non-economic loss and damage in the Pacific Islands. *Climate Risk Management* 33:100336. https://doi.org/https://doi.org/10.1016/j.crm.2021.100336

Miller D and Straehle C (2025) Climate change, vulnerability, and cultural loss. *Ethics & Global Politics* 18(4):8-22. https://doi.org/10.1080/16544951.2025.2578899

Nguyen MH, Nguyen TLA, Nguyen T et al. (2021). Economic analysis of choices among differing measures to manage coastal erosion in Hoi An (a UNESCO World Heritage Site). *Economic Analysis and Policy* 70:529-543. https://doi.org/https://doi.org/10.1016/j.eap.2021.04.006

Office of the Prime Minister of Fiji. 2023. Standard operating procedures for planned relocation in the Republic of Fiji. https://fijiclimatechangeportal.gov.fj/wp-content/uploads/2023/04/Standard-Operating-Procedures-for-Planned-Relocation-in-the-Republic-of-Fiji-1.pdf

Pham TD, Kaida N, Yoshino K et al. (2018) Willingness to pay for mangrove restoration in the context of climate change in the Cat Ba biosphere reserve, Vietnam. *Ocean & Coastal Management* 163:269-277. https://doi.org/https://doi.org/10.1016/j.ocecoaman.2018.07.005

Tuan TH, My NHD, Anh LTQ et al. (2014) Using contingent valuation method to estimate the WTP for mangrove restoration under the context of climate change: A case study of Thi Nai lagoon, Quy Nhon city, Vietnam. *Ocean & Coastal Management* 95: 198-212. https://doi.org/10.1016/j.ocecoaman.2014.04.008

United Nations (UN). (2021) Secretary General's High Level Panel on Internal Displacement. https://www.un.org/internal-displacement-panel/events/pacific-regional-consultation-internal-displacement#

Vásquez WF, Beaudin L, Murray TJ et al. (2022) Preferences for sea level rise adaptation: A contingent valuation study in Rio de Janeiro State, Brazil. *Ocean & Coastal Management* 218:106020. https://doi.org/10.1016/j.ocecoaman.2021.106020

Vinke K, Bergmann J, Blocher J, et al. (2020). Migration as adaptation? *Migration Studies* 8(4): 626-634.

Wesselink A, Paavola J, Fritsch O, et al. (2011). Rationales for public participation in environmental policy and governance: Practitioners' perspectives. *Environment and Planning A: Economy and Space* 43(11): 2688-2704.

World Bank (2024) East Asia Pacific - The Pacific Atoll Countries : Country Climate and Development Report. Washington, D.C. : World Bank Group. http://documents.worldbank.org/curated/en/099102024200013611

World Meteorological Organization (WMO) (2025) State of the Climate in the South-West Pacific 2024. WMO-No. 1374. https://library.wmo.int/viewer/69552/download?file=1356_State-of-the-Climate-in-SWP-2024_en.pdf&type=pdf&navigator=1

SUPPLEMENTARY FILES - Preferences for in-place and relocated living among climate-vulnerable communities in Fiji: a discrete choice experiment

Supplementary File S1: Brief description of study setting

Fiji is classified as an upper-middle income country by the World Bank and has a population of just over 900,000. It is an archipelago of more than 330 islands, divided into four administrative divisions: Central Division, which covers parts of the largest island, Viti Levu, including the capital city, Suva; Western Division, which covers the western part of Viti Levu; Northern Division, which includes Fiji's second-largest island, Vanua Levu, and surrounding islands; and Eastern Division, which comprises many of Fiji's smaller and more remote islands. Our study was conducted in Central Division. Climate-vulnerable communities were identified in consultation with the Ministry for Rural and Maritime Development and the Ministry for iTaukei Affairs, using a list of around 30 "at-risk" communities across Central Division. These included mixed settlements in the Suva district but were mostly coastal and tidal-river communities in Nausori and Tailevu provinces.

Supplementary File S2: Identification of attributes and attribute levels.

The selection of attributes and levels followed best-practice guidelines for discrete choice experiments to ensure included attributes were salient to participants, policy-relevant, and could be traded off against each other (Coast et al., 2012; Lancsar & Louviere, 2008)[a]. Specifically, we conducted (i) a search of electronic databases of published peer-reviewed studies, (ii) a review of relevant reports and policy documents identified through consultation with selected Fijian stakeholder organisations, and (iii) a series of focus group discussions with residents of climate vulnerable Fijian communities. These stages are summarised here with fuller details provided in Supplementary File S2.

For our scoping literature review, we searched Web of Science and Scopus in (February 2023) for peer-reviewed studies using quantitative stated-preference methods to elicit community priorities regarding community priorities for climate adaptation and resilience in low- and middle-income coastal and tidal-river settings. Table S2.1 shows the search strategy. Our search strategy did not target studies that focused on relocation preferences alone, but did identify studies where in-place actions (e.g. adaptation, resilience building measures) were traded against relocation. Consultation with stakeholders and residents highlighted the importance of comparing preferences for in-place adaptation versus relocation.

We used filter terms in Covidence to "screen-in" potentially relevant studies with allowable study designs. We included discrete choice experiments, conjoint analyses, best-best and best-worst scaling and contingent valuation studies. We identified 13 relevant studies, which helped position this present study in the context of the existing literature, informed a list of potential attributes for

[a] Coast J, Al-Janabi H, Sutton EJ, et al. (2012) Using qualitative methods for attribute development for discrete choice experiments: issues and recommendations. *Health Economics* 21:730-741. https://doi.org/10.1002/hec.1739. Lancsar, E., & Louviere, J. 2008. Conducting Discrete Choice Experiments to Inform Healthcare Decision Making. *PharmacoEconomics*. 26(8): 661-677. https://doi.org/10.2165/00019053-200826080-00004

consideration in focus group discussions and suggested draft wording of potential attributes and their levels.

Table S2.1: Literature review search terms

1	((TI=((perception* OR prefer* OR attitude* OR opinion* OR choice* OR rank* OR view* OR qualitative))) OR AB=((perception* OR prefer* OR attitude* OR opinion* OR choice* OR rank* OR view* OR qualitative))) OR AK=((perception* OR prefer* OR attitude* OR opinion* OR choice* OR rank* OR view* OR qualitative))
2	((TI=((“climate change” OR weather OR rain* OR flood* OR heat NEAR/20 climate OR cyclone* OR storm* OR inundation OR “sea level rise” OR erosion))) OR AB=((“climate change” OR weather OR rain* OR flood* OR heat NEAR/20 climate OR cyclone* OR storm* OR inundation OR “sea level rise” OR erosion))) OR AK=((“climate change” OR weather OR rain* OR flood* OR heat NEAR/20 climate OR cyclone* OR storm* OR inundation OR “sea level rise” OR erosion))
3	((TI=((adapt* OR remediat* OR mitigat* OR resilien*))) OR AB=((adapt* OR remediat* OR mitigat* OR resilien*))) OR AK=((adapt* OR remediat* OR mitigat* OR resilien*))
4	((TI=((pacific OR island* OR coastal OR Caribbean OR “Indian ocean” OR asia*))) OR AB=((pacific OR island* OR coastal OR Caribbean OR “Indian ocean” OR asia*))) OR AK=((pacific OR island* OR coastal OR Caribbean OR “Indian ocean” OR asia*))
5	((TI=((public OR communit*))) OR AB=((public OR communit*))) OR AK=((public OR communit*))
6	#5 AND #4 AND #3 AND #2 AND #1
7	#5 AND #4 AND #3 AND #2 AND #1 and English (Languages)

For our policy document review and stakeholder engagement, consultations were held with key agencies to introduce the proposed study and seek guidance on existing reports and policy documents related to climate vulnerable community risks, adaptation priorities, and development and relocation plans and policies. The intention of this consultation stage was to ensure this study complemented existing evidence and was relevant for policymakers and community development practitioners.

Stakeholder agencies included the Ministries of *I-Taukei* Affairs, Rural and Maritime Development, Economy, Environment and Climate Change, and Health and Medical Services, and Fiji Red Cross. Documents reviewed included the *Standard Operating Procedures for Planned Relocation in the Republic of Fiji* (Office of the Prime Minister, 2023) and the *Climate Relocation of Communities (CROC) Trust Fund* guidelines.

For community discussions, we conducted nine focus group discussions (FGDs) in four climate-vulnerable coastal or tidal river communities in Fiji’s Central Division in September 2023. These four communities were identified from a longer list of climate-vulnerable ‘at-risk’ villages/communities obtained through consultation with the Ministry for Rural and Maritime Development and the Ministry for *I-Taukei* Affairs. The four communities were selected to get a mix of community ‘types’, including coastal-adjacent and tidal-river (riparian) settings, aquaculture- and agriculture-based, as well as traditional Fijian (*I-Taukei*) and mixed communities. Communities were first visited by author AT, and/or field workers to check their location and suitability, as well as gain permission from community leaders to return and conduct focus group discussions. Community leaders then recruited residents to attend. The research team provided a simple morning or afternoon tea for

participants (biscuits, cakes, juice), but did not compensate participants financially. Two communities held three FGDs each stratified into men, women, and youth (mixed gender, younger adults aged 18+) groups. One community held two FGDs — men and combined women/youth. One 'mixed' and predominantly agricultural community held a single male-only FGD (N=4). FGD sizes ranged between 4 and 16 participants. Using a script (see Supplementary File S2), semi-structured discussions were conducted predominantly in Fijian, though some discussions moved between Fijian and English.

FGDs proceeded in three parts:

1. **Brainstorming:** Participants identified priority issues for (a) in-place adaptation and (b) relocation scenarios, under four broad themes identified via the literature and policy/document review: (i) housing, infrastructure and services; (ii) health, wellbeing and livelihood; (iii) culture and society; and (iv) decision-making and implementation. Focus group sessions were structured following the script in Supplementary File S2.

   Each session commenced with general questions about community facilities, services, utilities and main income sources. Then participants were asked to vote for their most and least preferred of four alternative relocation and no-relocation options. Each FGD identified their most preferred option as "staying put and investing in climate adaptation/resilience" and their least preferred "relocate to 100km away". Participants were then asked to consider the potential benefits and concerns they had under each of the four broad themes if they "stayed put" and if they "relocated 100kms away".

2. **Voting & scoring:** Each participant allocated three votes within each theme (3, 2, and 1 points) to rank their issues in order of importance. Each FGD then tallied their votes under each of the four broad themes, thereby ranking their FGD's priority issues for each theme.

3. **Prioritisation across groups:** Researchers collated and compared rankings across FGDs to identify high-priority themes common across gender and age groups. Specifically, the research team (DM, AT & RS) compiled a table of issues that were voted 1st or 2nd most preferred for each FGD/theme, assigning them 2 points and 1 point respectively each time. Points for each of these high priority issues were then tallied across all FGDs for each theme. This enabled us to identify the top issues under each theme for inclusion as attributes in the DCE.

The most consistently prioritised issues, relevant to both relocation and staying put scenarios, were:

- Food security (abundant, healthy, locally available)
- Sustainable income opportunities
- Access to essential services (healthcare, education, markets)
- Quality of life (low stress, affordable living)
- Reduced disruption from storms/tides (impacts on mobility, utilities, and income)
- Housing quality and durability
- Maintaining cultural identity, community ties, and connection to traditional land

These priority issues were refined into a **final set of eleven attributes**, each with discrete levels representing realistic and policy-feasible scenarios. Attributes were worded to be understandable to participants and tested in both English and Fijian during piloting. The final attributes and levels are presented in Figure S2.2.

Figure S2.2: Attributes and levels included in the experimental design

Attributes	Levels
Location	New climate-resilient location, government chosen
	My village – with minimal climate adaptation
	New climate-resilient location, community chosen
	My village – with significant climate adaptation
Access to fresh & healthy food	Rarely
	Sometimes
	Almost always
Work is	About 2 hrs away
	About 1 hr away
	Near where I live
Job opportunities near home	Only traditional income earning opportunities
	Only labouring/farming for an employer
	Only office or hospitality work
	Mix of opportunities
Proximity to services (e.g., education, health, markets)	About 2 hrs away
	About 1 hr away
	Near where I live
Quality of life	Very expensive & stressful
	A bit expensive & stress
	Affordable & not stressful
Storm & tide disruptions (e.g., utilities, income, mobility)	Most of the year
	4 months of the year
	4 weeks of the year
	4 days of the year
My 2-bedroom home is	A Cat 4-5 house
	Not up to Cat 4-5 code
	An apartment
	A lean-to
Culture and community roles	Traditional
	Modern
I connect with my community (veiwekani)	Every day
	Once a week
	Once a month
	Once a year
I connect with my land	Every day
	Once a week
	Once a month
	Once a year

Supplementary File S3: Script for focus groups

Introduction and Welcome:

We are researchers from Fiji National University and Monash University in Melbourne, working together and in consultation with Ministries of I-Taukei Affairs, Economy, Rural & Maritime Development.

Today, we want to hear your thoughts on weather and climate change. Not so much about how they're linked. But how you'd want to see your community deal with more frequent or more serious storms, flooding, rising tides if and when they do happen.

This will help us design a bigger, Fiji-wide survey. Maybe all communities have the same views, maybe some have different views.

We want this information to help government decision-makers understand what they should and shouldn't do to help at-risk communities into the future.

We are meeting with a few different communities this week.

Findings from these meetings will be shared with Fiji Government and also with participating communities. The same goes for findings from the bigger, Fiji-wide survey.

Storms, flooding, heat waves and dry spells can make life difficult:

- *people might get sick or be injured (or worse),*
- *there might be damage to houses and other private property,*
- *damage to the community hall or other facilities,*
- *damage to farmland, crops and livestock,*
- *damage to reefs, fisheries and coastlines,*
- *roads, power and phone lines may be cut (more often),*
- *drinking water may sometimes be unsafe to drink,*
- *food might sometimes be in short supply.*

All of this might make earning an income much more difficult.

Some of these problems are happening now, some may not be felt until 10, 20, 50 years into the future.

There are different actions for avoiding or reducing these problems. And these different actions likely have different positives and negatives.

Some actions might protect people's property but do little to protect people's livelihoods. Other actions might protect fisheries and farmland but leave people and private property at higher risk.

More drastic actions such as relocation might avoid all or most of these problems but would change how people live, what their future looks like and how their community looks and feels.

Ground Rules:

Our conversation today will be recorded for use in our research.

We kindly ask you to use only your first names during the discussion. Please mention your name when you have something to say. It's sometimes difficult to tell when one person stops talking and another begins on the recording. Rest assured, we will keep your identity secret when reporting our findings.

To ensure an open and respectful discussion, we have a few ground rules to follow:

Let's allow one person to speak at a time.

Please respect different ideas and opinions.

Please don't tell anyone else outside of this discussion about the ideas and opinions people shared here today.

Remember that you are not obliged to stay for the entire session, and if you ever feel uncomfortable or wish to leave for any reason, you are free to do so.

Icebreaker Activity :

To kick things off, we'll start with a couple of icebreaker activities to get to know each other better. Well, I'm guessing many of you already know each other, so perhaps helping you get to know us (members of the research team) and help us get to know you.

[Warm up: Word at a time story]

[Introductions & warm up: https://elabor8.com.au/workshop-icebreakers-five-of-the-best/]

[Question 1 – might only be needed once per community]

First, we would like to ask some questions about your community, so we can better understand what living here is like?

What important facilities and services are here in the village? Eg. Health clinic, primary school, church	
Are there some services that you travel for? How far (travel time)?	
What are the most common sources of income for people in this community? How close are these jobs (travel time)?	
What are the main sources of drinking water here? Has your water been interrupted in the last 4 weeks?	

Thank you. That gives us some really useful understanding of some important Features of life here.

[Question 2]

Actions can be broadly grouped into two categories: stay put, and relocate. For each of these categories, we could take smaller or more drastic action.

Staying put could mean doing nothing extra now and just trying to cope with problems as they arise.

Or, it could involve bigger investments now to reduce property damage, health impacts and other problems in the future.

Relocation could mean moving nearby (e.g. up a hill, further inland), or to an established town with existing services and employment opportunities.

What do we think about these options?

Actions	*(a)* *Stay here and do nothing different.*	*(b)* *Stay put and invest* *(e.g. build sea/river walls, regrow mangroves, better infrastructure)*	*(c)* *Relocate and rebuild nearby (within 5 kms)*	*(d)* *Relocate 50-100kms away to established town*
Rank *(most to least preferred)*				

On a piece of paper write down your most preferred action [from (a), (b), (c), (d)]?

[if there is no least preferred option amongst the group ask the group to now write down their least preferred option]

Let's talk more now about the advantages and disadvantages of our best option and our worst option.

To help us think about this we're going to think about advantages and disadvantages in three areas where we think climate change might matter:

- *Housing, infrastructure and services*
- *Health, wellbeing & livelihood, and*
- *Culture & Society*

[Question 3a]

Starting with advantages and disadvantages of our best option and our worst option for housing, infrastructure and services… [elicit opinion from the participants, limit loud voices, gently press for contributions from all participants].

Actions	*Best option*	*Worst option*
Advantages / disadvantages… ….for <u>Housing, infrastructure and services</u>		

[Question 3b]

Now what about some things we haven't mentioned yet? …did you take any of these into account when ranking our four options/actions?

Actions	*Best option*	*Worst option*
Advantages / disadvantages… ….for Housing, infrastructure and services		
	.	.
	.	.
	.	.
	.	.
	.	.
	.	.
House quality/type		
Water security *(e.g. quality of water, abundance of freshwater, supply interruptions)* *Water in the house, well, purchase bottled water.*		
Sanitation		
Reliable Electricity		
Reliable internet		
Waste management/rubbish collection		
Roads in the community		
Proximity to Community centres & places of worship		
Education - *Primary school* - *High school* - *College/university*		
Proximity to employment		
Proximity to shops and trade centre		
Early warning systems?		

[Question 4a]

Now what about advantages and disadvantages of our best option and our worst option for health, wellbeing & livelihood… [elicit opinion from the participants, limit loud voices, gently press for contributions from all participants].

Actions	*Best option*	*Worst option*
Advantages / disadvantages… ….for Health, wellbeing & livelihood		

[Question 4b]

…there's some things we haven't mentioned yet that might also be important.

…did you take any of these into account when ranking our four options/actions?

Actions	*Best option*	*Worst option*
Advantages / disadvantages… ….for Health, wellbeing & livelihood		
	.	.
	.	.
	.	.
	.	.
	.	.
	.	.
	.	.
	.	.
Water security		
Food Security		
Physical health (e.g. injuries, waterborne diseases (gastro), vector (e.g.mosquito-borne diseases), other?		
Mental health and wellbeing		
Income earning opportunities (traditional income sources – fishing, crops/agriculture; new income sources) Access to coast		
Income security (Assistance provided to find a new job, Job in the same profession, Job in a different profession provided and compensation paid)		
Cost of living (rent, mortgage, food, water, energy)		
Water security		
Food Security		
Physical health (e.g. injuries, waterborne diseases (gastro), vector (e.g. mosquito-borne diseases), other?		
Mental health and wellbeing		

[Question 5a]

Finally, what about advantages and disadvantages of our best option and our worst option for culture & society… [elicit opinion from the participants, limit loud voices, gently press for contributions from all participants].

Actions	*Best option*	*Worst option*
Advantages / disadvantages… ….for Culture & Society		

[Question 5b]

Now what about some things we haven't mentioned yet? …did you take any of these into account when ranking our four options/actions?

Actions	*Best option*	*Worst option*
Advantages / disadvantages… ….for Culture & Society		
	.	.
	.	.
	.	.
	.	.
	.	.
	.	.
	.	.
	.	.
Protecting vulnerable groups (Young, old, sick, women?)		
Maintaining ties with your community		
Keeping traditional culture & ways of life		
Staying close to where you grew up / place you live (e.g. access to coast, river)		
Social environment (Relocate to an existing settlement, Relocate to a newly constructed relocation area, Relocate to an existing settlement with friends/relatives living there)		
Changes/protection of native animal plant species?		

[Question 6a]

Ok, now let's stay focused on Culture & Society *for now. I want you to write down the 3 most important things in that Table to you. Writing the most important one first, then second most important, then third most important.*

Ok, let's look at the votes.

[Write down each category voted on in big writing. Total votes in each column should equal number of participants]

Culture & Society	Most important (3 pts)	2nd most important (2 pts)	3rd most important (1 pt)	Total pts (highest wins)
Total				

Ok, so now we can see a list of Features of Culture and Society *that are most important to members of this group*.

[Question 6b]

Ok, now let's focus on Health, wellbeing & livelihood protection/enhancement. *I want you to write down the 3 most important things in that Table to you. Again writing the most important one first, then second most important, then third most important…*

Health, wellbeing & livelihood	Most important (3 pts)	2nd most important (2 pts)	3rd most important (1 pt)	Total pts (highest wins)
Total				

Ok, so now we can see that these Features of Health, wellbeing & livelihood protection/enhancement are most important to members of this group.

[Question 6c]

Ok, now let's focus on Housing, infrastructure and services. *I want you to write down the 3 most important things in that Table to you, again writing the most important one first, then second most important, then third most important.*

Housing, infrastructure and services Feature	Most important (3 pts)	2nd most important (2 pts)	3rd most important (1 pt)	Total pts (highest wins)
Total				

Ok, so now we can see that these Features of Housing, infrastructure and services are most important to members of this group.

[Question 7a]

Now I want to talk briefly about how you'd prefer to see options / actions are managed, implemented and funded… [elicit opinion from the participants, limit loud voices, gently press for contributions from all participants].

	Best case	*Worst case*
.		

[Question 7b]

Now what about some things we haven't mentioned yet? …what does the best case and worst case look like?

Actions	*Best option*	*Worst option*
	.	.
	.	.
	.	.
	.	.
	.	.
Time to project delivery/protection (how long is too short, too long? Other disruptions)		
Lifespan of increased protection		
Time spent on community activities (incl. adaptation of local infrastructure projects, social cohesion building)		
Time spent on tending and cleaning the natural areas by the household (in days per month) (0;1;2;3;4)		
Who is responsible for managing mitigation/adaptation activities - Individuals - Communities - NGOs - Local Govt - National Govt		
Transparency of adaptation and relocation decision-making (Transparent relocation and neighbourhood building processes, Non-transparent relocation and neighbourhood building processes)		
Financial compensation No compensation paid, Compensation equal to yearly income, Compensation equal to income of the last three years		
Monetary contributions Community tax, income tax, shared costs etc.		

[Question 7c]

Ok, now let's focus on how actions might be Managed, Implemented and Funded. *I want you to write down the 3 most important things in that Table to you, again writing from most important to least important.*

{Most important category} Feature	Most important (3 pts)	2nd most important (2 pts)	3rd most important (1 pt)	Total pts (highest wins)
Total				

Ok, so now we can see that these Features are most important to members of this group.

[Question 8]

So – we're getting close to the end now. Our last task is to bring these different categories together. On the wall now, we have highlighted to most important features from each category in order of importance from the perspective of the group.

Now I want you to look at these X features as a whole and select the three most important for you. They can be from across the categories or just from one. Again in order of importance: most important, second most important, third most important.

Right let's count the votes. ……

{Most important category} Feature	Most important (3 pts)	2nd most important (2 pts)	3rd most important (1 pt)	Total pts (highest wins)
Total				

That's our last question for you. Before we finish does anyone have any questions for us?

Thank you so much for participating today. We really appreciate it.

Vinaka vakalevu.

Supplementary File S4: Talking points for field-team supported sessions

Key Points

- What is the research about:
  - Impacts of climate change disrupting life.
  - Research will help understand what features of where people live and how they live are most important for Fijians.
- This is a survey. It includes asking you to choose between alternative hypothetical living scenarios.
- Your community has been chosen because it is at-risk
- Your responses will inform government decisions, so it's important you take your time with the survey.
- You must be 18 or older.
- It is voluntary and your responses will be kept confidential.
- A report will be provided to government and shared with participating communities.
- All responses will be grouped together, so no individual responses will be revealed.

Survey includes two types of questions:

Some questions about you (e.g. about where you live and what you do for work, whether you're married, that type of thing).

9 Living Situation Choice tasks.

1. Choice: Which living situation would you prefer to be in 2 years from now?
2. Alternatives: There are two situations to choose from. Only choose one.
3. Attributes: How do Living Situations differ? Characteristics of living situations (attributes) in column 1.
4. Alternatives differ on attributes: A and B are different. Provide example.
5. Global comparison: Compare A and B on all attributes.
6. Decision making: Work left to right and down the page. Or work down column A and then column B. Or a combination of the two.
7. Tick a box

Supplementary File S5: Data analysis

Estimating preference parameters

To estimate preference parameters, we regressed choice data from the survey on attribute levels from our experimental design using multinomial logit (MNL) and mixed multinomial logit (MMNL) / random parameters models for panel data (RP-panel). Both MNL and MMNL / RP-panel models decompose the utility (U_{ijk}) that participant *i* obtains from alternative *j* in choice set *k* into an observed component (V_{ijk}) and a random or unobserved component (ε_{ijk}):

$$U_{ijk} = V_{ijk} + \varepsilon_{ijk} \quad (1)$$

Our base specification for the V_{ijk} for both MNL and MMNL / RP-panel models is an attribute-only main effects model:

$$V_{ijk} = \alpha + \beta M_{jk} + \delta_j(\alpha * G_i) \quad (2)$$

Where M_{jk} is a vector of attribute-levels that were varied across alternatives and choice sets according to our experimental design. G_i is a set of indicator variables capturing assignment of participants to one of our four blocks of 9 choice tasks.

We report MNL estimates for reference but, as one of our primary aims is to investigate preference heterogeneity, we rely on MMNL / RP-panel models and latent class (LC) models to characterise preferences and preference-types in the study sample and relevant sub-samples.

The MMNL / RP-panel model relaxes the IIA assumption and characterises variation in random parameters as a continuous distribution as follows:

$$\beta_{im} = \bar{\beta}_m + \tau_j z_{ijkm} \quad (3)$$

where β_{im} is the participant-specific coefficient on attribute m, its mean is $\bar{\beta}_m$ and variation around this mean is characterised by an estimated standard deviation (or limits): τ_m, and a random component z_{ijkm} that follows a specified (continuous) distribution. This allows preference parameters to vary across individuals to characterise preference heterogeneity (Dahlberg and Eklof 2003)[b]. Of note, the random coefficients are not estimated for *each* individual, rather they are assumed to follow a specific distribution and parameters of this distribution are estimated. For our base MMNL / RP-panel model, we model preference heterogeneity for a parsimonious set of random parameters (*location* & *access to fresh & healthy food*) and with all other attributes held fixed. We explore preference heterogeneity across a larger set of attributes in supplementary analyses.

Preference types

To identify 'preference-types', we estimated MNL latent class models for panel data (LC-panel) to obtain class-specific utility functions describing preference parameters for each type or class (Greene and Hensher, 2003)[c].

$$U_{ijk \mid c} = V_{ijk \mid c} + \varepsilon_{ijk \mid c} \quad (4)$$

Estimation of class-specific utility functions allows the unobserved component of utility (the ε_{ijk}) to be distributed differently for different classes, and for preference parameters in the observed component

[b] Dahlberg M and Eklöf M (2003) Relaxing the IIA assumption in locational choice models: A comparison between conditional logit, mixed logit, and multinomial probit models. Nationalekonomiska institutionen (Working paper). Available from: https://urn.kb.se/resolve?urn=urn:nbn:se:uu:diva-4463

[c] Greene, W.H. and Hensher, D.A., 2003. A latent class model for discrete choice analysis: contrasts with mixed logit. Transportation Research Part B: Methodological, 37(8), pp.681-698.

of utility (V_{ijk}) to differ by class or type (Sfeir et al 2021)[d]. People within a class share common characteristics and similar preferences whereas people in different classes are dissimilar to each other on both characteristics and preferences (Coogan et al 2014)[e]. For our base LC model, we specified the number of classes based on a comparison of model fit and interpretability across candidate 2-, 3- and 4-class models. Class-specific utility functions from LC-panel models were main effects-only models estimated in the main study sample, without adjustment for participant characteristics.

Posterior probabilities of class membership for our two- and three-class models were calculated based on the observed sequence of each participant's choices using the post-estimation lclogitpr2 command in STATA (e.g. lclogitpr2 pr2C, class(1 2) cp). These posterior probabilities were used to assign participants to classes wherein class membership was assumed if the posterior probability of class membership exceeded 0.50 (e.g., C1_member=1 if pr2C1>0.5; C1_member=0 if pr2C1<0.5), and where participants with an equivocal 50:50 probability of class membership were excluded. Predictors of class membership for each class were identified from regressions of this binary indicator of class membership on participant demographic characteristics: X_i, attitudes and experience such as climate change worry: W_i, survey characteristics such as block and survey language: K_i, and response style such as self-reported difficulty rating: Z_i.

$$D_i = \alpha + \beta_1 X_i + \beta_2 W_i + \beta_3 K_i + \beta_4 Z_i + \varepsilon_i \quad (5)$$

Where D_i is a dummy indicator for the posterior probability of class membership: P_i, for participant *i* based on their observed sequence of choices. For each prediction equation, we estimated five alternative specifications with increasingly complete sets of predictors to minimise loss of sample size due to missingness on the X_i, W_i and Z_i. Tables S8 and S9 report results from a parsimonious model and an extended model. All data analysis was undertaken in STATA Version 18 (StataCorp 2024).

[d] Sfeir, G., Abou-Zeid, M., Rodrigues, F., Pereira, F.C. and Kaysi, I., 2021. Latent class choice model with a flexible class membership component: A mixture model approach. Journal of choice modelling, 41, p.100320.

[e] Coogan MA, Campbell M, Adler TJ et al. (2014) Examining behavioral and attitudinal differences among groups in their traffic safety culture. *Transportation Research Part F: Traffic Psychology and Behaviour* 26:303-316.

Supplementary File S6: Additional Results

Table S6.1: Attitudes / experience of study sample

Attitude / experience	Non-missing (%)	Mean (Range) / n / N (%)
How worried are you about climate change?		
Not at all	459 / 476 (96%)	11 / 459 (2%)
A little		86 / 459 (19%)
A moderate amount		131 / 459 (29%)
Very		231 / 459 (50%)
Do you think you could afford the cost of serious storm damage to your home (e.g. roof repairs) or other possessions?		
Yes, without needing help from others	451 / 476 (95%)	27 / 451 (6%)
Yes, but only with help from community		22 / 451 (5%)
Yes, but only with help from comm & govt		243 / 451 (54%)
No		159 / 451 (35%)
In the last 12 months, have extreme weather events or environmental changes caused damage to your home or property or affected your income?		
Yes	452 / 476 (95%)	286 / 452 (63%)
No		166 / 452 (37%)
If yes, how would you describe this impact?		
Very minor	285 / 286 (100%)	17 / 285 (6%)
Minor		57 / 285 (20%)
Moderate		83 / 285 (29%)
Serious		39 / 285 (14%)
Very serious		89 / 285 (31%)
Do you think climate change might one day force you to move to a new climate-resilient location?		
Yes, it already has	444 / 476 (93%)	70 / 452 (16%)
Yes, it's very likely		128 / 452 (29%)
Yes, it's possible		126 / 452 (28%)
No		120 / 452 (27%)
If yes, when do you expect this to happen?		
It already has	318 / 324 (98%)	88 / 318 (27%)
Within 12 months		19 / 318 (6%)
1-2 years from now		64 / 318 (20%)
3-5 years from now		41 / 318 (13%)
6-10 years from now		56 / 318 (18%)
More than 10 years from now		50 / 318 (16%)

Table S6.2: Survey / response characteristics

Attitude / experience	Non-missing (%)	Mean (Range) / n / N (%)
Survey language		
I-Taukei	476 / 476 (100%)	406 / 478 (85%)
English		70 / 478 (15%)
Survey mode *(Was the survey left behind for unsupported completion & picked up later?)*		
Yes	476 / 476 (100%)	264 / 476 (55%)
No		212 / 476 (45%)
How difficult or easy was it to answer these Living Situation questions?		
Very easy	465 / 476 (98%)	74 / 465 (16%)
Easy		183 / 465 (39%)
Neither easy nor difficult		96 / 465 (21%)
Difficult		97 / 465 (21%)
Very difficult		15 / 465 (3%)
Did anyone help you answer the scenario choice questions?		
A child or children from my HH	450 / 476 (95%)	3 / 450 (1%)
Other adult(s) from my HH		11 / 450 (2%)
Other adult(s) from outside my HH		8 / 450 (2%)
Wife or husband		28 / 450 (6%)
No one else helped me		400 / 450 (89%)

Table S6.3: Parameter estimates from main-effects only, MNL and alternative RP-panel models

	MNL	MMNL		
Attribute, *level*	Base	RP-panel_1	RP-panel_2 (base model)	
	Coefficient (SE)	Coefficient (SE)	Coefficient (SE)	SD (95%CI)
Location				
New climate-resilient location, govt chosen (ref)	0	0	0	0
New climate-resilient location, community chosen	0.592*** (0.23)	0.592*** (0.22)	0.625** (0.25)	0.79 (0.58, 1.08)
My village – with minimal climate adaptation	1.263** (0.57)	1.263** (0.58)	1.239** (0.63)	0.41 (0.24, 0.72)
My village – with significant climate adaptation	1.322*** (0.50)	1.322*** (0.51)	1.328** (0.56)	0.50 (0.28, 0.89)
Access to fresh & healthy food				
Rarely (ref)	0	0	0	0
Sometimes	0.665* (0.36)	0.665* (0.38)	0.634 (0.40)	0.21 (0.03, 1.71)
Almost always	0.576* (0.34)	0.576 (0.36)	0.532 (0.38)	0.11 (0.00, 634.22)
Work is				
About 2 hrs away	0.207* (0.11)	0.207* (0.12)	0.221* (0.13)	-
About 1 hr away	-0.058 (0.11)	-0.058 (0.11)	-0.078 (0.12)	-
Near where I live (ref)	0	0	0	0
Job opportunities near home				
Only traditional income earning opportunities	0.016 (0.28)	0.016 (0.30)	-0.042 (0.31)	-
Only labouring/farming for an employer	-0.145 (0.28)	-0.145 (0.28)	-0.165 (0.29)	-
Only office or hospitality work	-0.024 (0.29)	-0.024 (0.31)	-0.091 (0.33)	-
Mix of opportunities (ref)	0	0	0	-
Proximity to services (e.g., education, health, markets)				
About 2 hrs away	-0.834* (0.50)	-0.834 (0.51)	-0.863 (0.54)	-
About 1 hr away	-0.280 (0.19)	-0.280 (0.19)	-0.259 (0.20)	-
Near where I live (ref)	0	0	0	-
Quality of life				
Very expensive & stressful	-0.133 (0.11)	-0.133 (0.11)	-0.136 (0.11)	-
A bit expensive & stressful	-0.288 (0.19)	-0.288 (0.19)	-0.259 (0.20)	-
Affordable & not stressful (ref)	0	0	0	-
Storm & tide disruptions (e.g., utilities, income, mobility)				
Most of the year	-0.299** (0.13)	-0.299** (0.13)	-0.336** (0.14)	-
4 months of the year	-0.111 (0.15)	-0.111 (0.15)	-0.125 (0.15)	-
4 weeks of the year	-0.491** (0.24)	-0.491** (0.24)	-0.473* (0.26)	-
4 days of the year (ref)	0	0	0	-
My 2 bedroom home is				
A Cat 4-5 house	-0.118 (0.28)	-0.118 (0.27)	-0.107 (0.29)	-
Not up to Cat 4-5 code	-0.148 (0.27)	-0.148 (0.27)	-0.146 (0.29)	-
An apartment	-0.151 (0.13)	-0.151 (0.12)	-0.190 (0.13)	-
A lean-to (ref)	0	0	0	-
Culture and community roles				
Traditional	0.002 (0.12)	0.002 (0.11)	0.012 (0.12)	-
Modern (ref)	0	0	0	-
I connect with my community (veiwekani)				
Every day	-0.275 (0.23)	-0.275 (0.23)	-0.231 (0.24)	-
Once a week	-0.181 (0.18)	-0.181 (0.19)	-0.126 (0.19)	-
Once a month	-0.237 (0.15)	-0.237 (0.15)	-0.222 (0.16)	-
Once a year (ref)	0	0	0	-
I connect with my land				
Every day (ref)	0	0	0	-
Once a week	0.093 (0.20)	0.093 (0.21)	0.045 (0.22)	-
Once a month	0.301 (0.27)	0.301 (0.28)	0.268 (0.29)	-
Once a year	0.392 (0.38)	0.392 (0.39)	0.328 (0.42)	-
Block				
1 (ref)	0	0	0	-
2	-0.748 (0.47)	-0.748 (0.49)	-0.741 (0.52)	-
3	-0.321 (0.30)	-0.321 (0.31)	-0.357 (0.33)	-
4	-0.193 (0.25)	-0.193 (0.26)	-0.244 (0.27)	-

Constant	0.111 (0.21)	0.111 (0.21)	0.120 (0.22)	-
Log likelihood	-2828.36	-2828.36	-2812.56	
Observations	4,222	4,222	4,222	
Participants	476	476	476	

Table S6.4: Information criterion for models of two to four classes

Information criteria	Two class model	Three class model	Four class model
AIC	5900.2271	5977.6348	6038.5876
BIC	5679.4599	5652.7322	5630.3767
CAIC	5953.2271	6055.6348	6136.5876

Table S6.5: Class-specific utility functions, 2-class & 3-class models

	2-class model		3-class model		
Attribute, *level*	Class 1	Class 2	Class 1	Class 2	Class 3
	Coefficient (SE)				
Location					
New climate-resilient location, govt chosen (ref)	0	0	0	0	0
New climate-resilient location, community chosen	-0.498** (0.24)	1.160*** (0.26)	-0.383 (0.26)	0.788*** (0.26)	1.372*** (0.46)
My village – with minimal climate adaptation	-0.498* (0.26)	1.112*** (0.37)	-0.509 (0.33)	2.326*** (0.47)	0.836 (0.61)
My village – with significant climate adaptation	-0.684** (0.35)	1.807*** (0.40)	-0.960** (0.40)	2.102*** (0.40)	2.664*** (0.74)
Access to fresh & healthy food					
Rarely (ref)	0	0	0	0	0
Sometimes	-0.108 (0.22)	0.400 (0.28)	-0.324 (0.22)	0.539** (0.27)	0.633* (0.34)
Almost always	-0.255 (0.19)	0.679*** (0.25)	-0.053 (0.22)	1.092*** (0.30)	-1.703*** (0.47)
Work is					
About 2 hrs away	0.128 (0.26)	-0.123 (0.31)	-0.302* (0.16)	0.861*** (0.22)	0.341 (0.40)
About 1 hr away	0.070 (0.18)	-0.320 (0.23)	-0.179 (0.16)	0.380** (0.21)	-0.198 (0.36)
Near where I live (ref)	0	0	0	0	0
Job opportunities near home					
Only traditional income earning opportunities	0.738*** (0.17)	-0.523** (0.21)	0.871** (0.39)	-1.979*** (0.19)	2.196*** (0.38)
Only labouring/farming for an employer	0.323 (0.21)	0.357* (0.21)	0.580 (0.36)	-2.357*** (0.24)	4.131*** (0.35)
Only office or hospitality work	0.490 (.)	-0.527 (.)	1.148* (0.60)	-2.671 (.)	0.589 (.)
Mix of opportunities (ref)	0	0	0	0	0
Proximity to services (e.g., education, health, markets)					
About 2 hrs away	1.012*** (0.24)	-1.080*** (0.27)	1.055*** (0.30)	-2.198*** (0.27)	1.988 (.)
About 1 hr away	0.244 (0.16)	-0.410** (0.16)	0.328* (0.17)	-0.473*** (0.20)	-1.370*** (0.33)
Near where I live (ref)	0	0	0	0	0
Quality of life					
Very expensive & stressful	0.014 (0.20)	-0.677*** (0.23)	0.221 (0.16)	-0.572*** (0.22)	-0.759* (0.39)
A bit expensive & stressful	0.244 (0.27)	-1.171*** (0.24)	0.227 (0.26)	-0.273 (0.21)	-1.922*** (0.36)
Affordable & not stressful (ref)	0	0	0	0	0
Storm & tide disruptions (e.g., utilities, income, mobility)					
Most of the year	0.173 (0.15)	-0.685*** (0.18)	0.803*** (0.30)	-2.127*** (0.21)	0.314 (0.39)
4 months of the year	0.261 (0.18)	-0.982*** (0.23)	0.437** (0.20)	-0.825*** (0.23)	-2.426*** (0.37)
4 weeks of the year	0.590** (0.24)	-1.171*** (0.30)	0.993*** (0.27)	-1.479*** (0.27)	-0.051 (0.38)
4 days of the year (ref)	0	0	0	0	0
My 2-bedroom home is					
A Cat 4-5 house	1.604*** (0.25)	-0.610** (0.31)	0.814*** (0.25)	-1.233*** (0.21)	3.539*** (0.56)
Not up to Cat 4-5 code	0.821*** (0.19)	-0.149 (0.19)	0.732** (0.24)	-0.253 (0.25)	1.645*** (0.35)
An apartment	0.674*** (0.25)	-0.995*** (0.26)	-0.668*** (0.21)	0.532** (0.27)	1.309*** (0.50)
A lean-to (ref)	0	0	0	0	0

Culture and community roles					
Traditional	0.305 (0.20)	-1.115*** (0.27)	-0.363** (0.18)	1.004*** (0.27)	-1.174*** (0.37)
Modern (ref)	0	0	0	0	0
I connect with my community (veiwekani)					
Every day	-0.133 (0.29)	0.070 (0.29)	-0.210 (0.26)	0.108 (0.27)	-1.696*** (0.40)
Once a week	-0.595* (0.29)	0.610* (0.33)	-0.672*** (0.24)	0.478* (0.28)	0.165 (.)
Once a month	0.174 (0.28)	-0.410 (0.31)	0.321 (0.29)	-0.934*** (0.26)	0.451 (0.41)
Once a year (ref)	0	0	0	0	0
I connect with my land					
Every day (ref)	0	0	0	0	0
Once a week	-0.284 (0.26)	-0.223 (0.28)	-0.007 (0.19)	0.075 (0.21)	-2.635*** (0.42)
Once a month	0.201 (0.32)	-1.089*** (0.37)	-0.169 (0.21)	0.599* (0.21)	-1.187 (.)
Once a year	-1.116*** (0.36)	0.564*** (0.41)	-1.646*** (0.38)	1.172*** (0.41)	0.650 (0.57)
Constant	0.104 (0.29)	0	0.932*** (0.23)	0.640*** (0.22)	-
Shares	52.6%	47.4%	46.7%	34.9%	18.4%
AIC	5900.2271		5977.6348		
BIC	5679.4599		5652.7322		
CAIC	5953.2271		6055.6348		

** p<0.10, ** p<0.05, *** p<0.01*

Table S6.6: Predictors of class membership, 3-class model

Respondent characteristics	Base model^			Extended model^		
	Class 1	Class 2	Class 3	Class 1	Class 2	Class 3
Education (higher education)	-0.019 (0.23)	0.337 (0.24)	-0.578* (0.31)	0.028 (0.26)	0.311 (0.27)	-0.592* (0.35)
Gender (female)	0.136 (0.22)	-0.168 (0.23)	0.014 (0.29)	0.051 (0.25)	-0.136 (0.26)	0.068 (0.34)
Age (in years)	0.010 (0.01)	-0.002 (0.01)	-0.018* (0.01)	0.009 (0.01)	-0.002 (0.01)	-0.016 (0.01)
Employment (full-time/part-time)	0.086 (0.25)	0.074 (0.26)	-0.119 (0.34)	0.206 (0.29)	0.022 (0.29)	-0.186 (0.39)
Employment (retired)	-0.168 (0.39)	0.164 (0.41)	0.177 (0.49)	-0.323 (0.46)	0.391 (0.48)	-0.066 (0.62)
Household size (1-2 people)	-0.412 (0.40)	0.880** (0.40)	-0.151 (0.54)	-0.375 (0.44)	0.685 (0.45)	0.196 (0.58)
Climate worry (on 5-point scale)	-0.173 (0.12)	-0.032 (0.12)	0.244 (0.17)	-0.260* (0.15)	-0.051 (0.16)	0.364* (0.22)
Resident in village (in years)				-0.000 (0.01)	-0.000 (0.01)	0.000 (0.01)
Financial resilience to climate impacts (yes)				-0.002 (0.25)	-0.391 (0.27)	0.425 (0.34)
Previous 12 mnth climate impact (yes)				0.209 (0.27)	-0.174 (0.27)	-0.081 (0.35)
Home ownership (owner-occupier)				0.210 (0.39)	-0.044 (0.40)	-0.224 (0.50)
Expected move due to climate (yes, in future)				-0.591** (0.26)	0.844*** (0.28)	-0.420 (0.34)
Survey language (*I-Taukei*)				-0.814 (0.61)	-0.121 (0.61)	1.011 (0.79)
Survey mode (left behind)				-0.182 (0.35)	0.046 (0.36)	0.237 (0.50)
Survey difficulty (difficult / v difficult)				-0.153 (0.10)	0.069 (0.10)	0.057 (0.13)
Survey completion (on own / no help)				-0.029 (0.37)	-0.597 (0.38)	1.259* (0.66)
Constant	-0.339 (0.69)	-0.781 (0.75)	-1.483 (0.91)	1.669 (1.29)	-0.478 (1.35)	-4.751*** (1.83)
N	437	437	433[#]	363	363	359[#]

** p<0.10 **p<0.05, *** p<0.01,* ^Includes village and block fixed effects. Results suppressed but de-identified results available upon request. [#]n=4 from one village omitted because village fixed effect predicts failure perfectly.

Table S6.7: Predictors of class membership, 2-class model

Respondent characteristics	Base model^		Extended model^	
	Class 1	Class 2	Class 1	Class 2
	Coefficient (SE)			
Education (higher education)	-0.359 (0.23)	0.359 (0.23)	-0.408 (0.26)	0.408 (0.26)
Gender (female)	-0.103 (0.22)	0.103 (0.22)	-0.210 (0.26)	0.210 (0.26)
Age (in years)	0.000 (0.01)	-0.000 (0.01)	-0.001 (0.01)	0.001 (0.01)
Employment (full-time/part-time)	-0.306 (0.26)	0.306 (0.26)	-0.234 (0.29)	0.234 (0.29)
Employment (retired)	-0.929** (0.41)	0.929** (0.41)	-1.228** (0.49)	1.228** (0.49)
Household size (1-2 people)	-0.318 (0.39)	0.318 (0.39)	-0.467 (0.44)	0.467 (0.44)
Climate worry (on 5-point scale)	-0.125 (0.13)	0.125 (0.13)	-0.101 (0.15)	0.101 (0.15)
Resident in village (in years)			-0.002 (0.01)	0.002 (0.01)
Financial resilience to climate impacts (yes)			0.119 (0.26)	-0.119 (0.26)
Previous 12 mnth climate impact (yes)			-0.074 (0.27)	0.074 (0.27)
Home ownership (owner-occupier)			0.088 (0.39)	-0.088 (0.39)
Expected move due to climate (yes, in future)			-0.184 (0.26)	0.184 (0.26)
Survey language (*I-Taukei*)			-0.776 (0.63)	0.776 (0.63)
Survey mode (left behind)			-1.271*** (0.38)	1.271*** (0.38)
Survey difficulty (difficult / v difficult)			-0.048 (0.10)	0.048 (0.10)
Survey completion (on own / no help)			0.328 (0.38)	-0.328 (0.38)
Constant	1.668** (0.72)	1.668** (0.72)	3.909*** (1.37)	-3.909*** (1.37)
N	437		363	363

** p<0.10 **p<0.05, *** p<0.01,* ^Includes village and block fixed effects. Results suppressed but de-identified results available upon request. [#]n=4 from one village omitted because village fixed effect predicts failure perfectly.