
**Climate Belief and Climate Anxiety among Financially Independent Adults in Pakistan:
Financial Stress as a Mediator and Social Support as a Moderator**

Marwa Qamar¹, Shaleem Sheraz², Saman Sikander³, Sahar Iftikhar⁴

^{1,2,3,4} Department of Psychology, University of Sargodha. Email: marwa2006qamar@gmail.com
Email: sherazshaleem@gmail.com Email: samansikander7@gmail.com
Email: saharrana580@gmail.com

DOI: <https://doi.org/10.70670/sra.v4i1.2512>

Abstract

Climate change is becoming a cause of psychological distress, but the pathways by which climate awareness shifts to climate-related anxiety are not well understood in economically marginalized and climate-vulnerable communities. For financially independent adults in Pakistan, economic justice is also met with environmental risks, a lack of recovery options, a lack of income, and family responsibilities. Hence, financial insecurity can lead to a heightened sense of concern about climate change and the buffering effects of social support are unclear. The aim of this study was to explore the relationship between climate belief and climate anxiety, to test the association between climate belief, financial stress, and climate anxiety, to test financial stress as a mediator, and evaluate social support as a moderator. A quantitative, cross sectional, correlational design was used. A convenience sampling of 300 financially-capable adults in Chakwal and Jhelum districts completed the Climate Change Perceptual Awareness Scale (19 items), Climate Change Worry Scale (10 items), a 10 item financial stress measure, and a 12 item perceived social support measure. Data were analyzed using descriptive statistics, reliability analysis, Pearson correlations, simple linear regression and Hayes process Models 4 and 1 with 5000 bootstrap samples in SPSS 26. There was a strong positive association between climate belief and climate anxiety, as well as a significant partial indirect effect between financial stress and climate anxiety. The strength of the relationship between climate belief and climate anxiety was not significantly affected by social support. The results suggest that the economic vulnerability is a significant pathway in which climate awareness turns into psychological stressors. The study emphasizes the importance of having adequate mental-health responses that incorporate emotional support, financial protection, disaster preparedness, and accurate communication of risks, including community services that are accessible and available, in climate vulnerable areas of Pakistan and other communities with limited resources and repeated environmental shocks.

Keywords: Climate belief; climate anxiety; climate change worry; financial stress; social support; mediation; moderation.

Introduction

The challenges of climate change are becoming more felt as heat, changed rainfall, flooding, livelihood disruption, damaged infrastructure, rising food and energy costs, displacement, and uncertainty of recovery. Disaster exposure, economic loss, social disruption and livelihood threats,

and the expectation of further harm are direct and indirect impacts on mental health from these hazards (Intergovernmental Panel on Climate Change, 2022, 2023; World Health Organization, 2022). The impact is particularly high in areas with less social protection, infrastructure and access to mental health care. As such, Pakistan is an important context for climate-psychology research. The 2022 floods resulted in human, agriculture, infrastructure, and economic losses on a massive scale (Government of Pakistan et al., 2022) and the Potohar region received heavy amounts of monsoon rainfall in July 2025. Initial reports indicated “cloudburst” but later reports by the Pakistan Meteorological Department revealed 142.2 mm of rainfall at Chakwal station in 24 hours, which was not a meteorological “cloudburst” (Associated Press of Pakistan, 2025).

Climate change worry, as used as a proxy for climate anxiety in this study, is defined as the psychological outcome. Climate anxiety is a feeling of emotional and cognitive upset over real or expected climate change, but cannot be assumed to be a psychiatric condition. Modern literature portrays a spectrum from proportional concern and active involvement to the persistent worry and rumination, helplessness, and dysfunctional coping that characterize CPD (Coffey et al., 2021; Cosh et al., 2024; Crandon et al., 2024). Negative climate emotions can also be connected to pro-environmental actions, and interpretation is significant because of the intensity of the emotions, the functional impact, the perceived effectiveness and coping resources (Ogunbode et al., 2021).

Climate belief is suggested as a significant determinant of climate anxiety. The climate beliefs measured in this research are not simply the belief that climate change is a reality, but perceptual awareness of physical changes, affective responses, and changes in public discussion concerning climate change. These are daily indicators, and are captured by the Climate Change Perceptual Awareness Scale (Cipriani et al., 2024). Greater awareness can help prepare and promote responsible action, but can also make threat-related information more salient. Perceived environmental threat is more likely to trigger anxiety if it is perceived to be high, unknown, and close to self, and/or controllable (Crandon et al., 2024).

This link is possibly due to financial stress. Households can be vulnerable to climate change impacts on their livelihoods due to damage to their property, loss of working time, decreased farm productivity, health expenses, rising costs, transportation problems and adaptation costs. Financial strain is not only about lack of income, but also about perceived difficulties to discharge obligations and loss of financial control and concerns about future security. Financial stressors have been shown to be associated with psychological stress in economically responsible adults in recent studies (Nasir et al., 2025). Financial worries for adults who are financially independent might then be felt as a concern over income, savings, debt, repairs, and ability to bounce back from future events, among other sources.

Social support can serve as an interpersonal coping mechanism via emotional validation, information, companionship, and practical support (Acoba, 2024). Support, however, does not always have to lessen a particular stressor-outcome link. When families and communities experience the same drops in rainfall, increases in inflation, job loss, or risk to their property, close relationships may continue to be emotionally rewarding, but they are not necessarily materially protective. It may be necessary, therefore, to include more than general support – both individual and social and structural responses – in the implementation of climate-anxiety interventions (Bingley et al., 2022).

The vast majority of climate anxiety studies have been carried out in relatively wealthy communities and/or among students and youth. The significance of climate concern has been documented in large-scale international research studies (Hickman et al., 2021; Ogunbode et al., 2021), but the studies are less numerous that focus on financially responsible adults in the Global South, where concern for climate is tied to immediate economic hardship. The rural context also reveals a link between climate-related environmental and livelihood stresses and significant mental-health challenges (Daraz et al., 2024). The current study fills this void by examining a direct relationship, a mediation through

economic factors, and a buffering through social factors among adults in Chakwal and Jhelum. The study aimed to explore the interplay between climate belief and climate anxiety; as well as between climate belief, financial stress, and social support; to test whether financial stress mediates the relationship between climate belief and climate anxiety; and to determine if social support moderates the relationship between climate belief and climate anxiety. The hypothesis was that climate belief would positively relate to and predict climate anxiety and financial stress would have a strong indirect effect, while social support would moderate the positive climate belief-climate anxiety relationship. A moderation effect was maintained and interpreted even when it was not significant.

Literature Review and Theoretical Framework

Climate belief and climate anxiety

The sense of climate belief can range from an abstract belief that climate change is human-caused to actual awareness of the effects in one's immediate surroundings. This is particularly true in vulnerable communities where social change is not only driven by scientific information, but also by the actual weather, environmental, public opinion and emotional changes. To capture physical, affective, and communication-related manifestations, Cipriani et al. (2024) have created the Climate Change Perceptual Awareness Scale. Climate belief in this study refers to an experience near state of understanding that: Climate change is real; Climate change is visible; Climate change is consequential.

Increased climate belief has been associated with increased anxiety, as outlined in cognitive appraisal theory. When a person has more anxiety, the likelihood of evaluation of environmental information as personally relevant decreases, and when a person has more awareness, the likelihood of evaluation of environmental information as personally relevant increases (Crandon et al., 2024). Empirical research also links levels of concern and exposure to negative climate emotions and mental health (Coffey et al., 2021; Cosh et al., 2024; Ogunbode et al., 2021). The Climate Change Worry Scale developed by Stewart (2021) is especially relevant because it measures proximal concern with personal and relational consequences; and subsequent studies have established its relevance beyond cultural contexts (Larionow et al., 2024). Furthermore, extensive global evidence has established that the individual salience of environmental threat rises as institutional action is perceived as insufficient and as there is less control over the situation (Hickman et al., 2021; Ogunbode et al., 2021).

Financial stress as an indirect pathway

So, financial stress is a plausible mediator because of the economic impacts of climate change. The impact of climate hazards can cause damage to assets, disrupt employment, diminish agricultural income, elevate health and repair expenses, and cause uncertainty over future responsibilities (Intergovernmental Panel on Climate Change, 2022). A person who feels that climate change is a serious issue could expect these effects even if they have not experienced any direct loss, themselves. Environmental threat can then feel like a psychological threat, when it is expressed in terms of food, electricity, transport, housing, saving, debt and recovery.

Financial stress involves feeling inadequate, not being able to control finances, struggling to pay bills and concerns about what's coming next. Whether a person has a similar income, its intensity depends on the amount of debt owed, number of dependents, job security, savings, expectations, and shocks. There is recent evidence to suggest that financial stress is linked to significant psychological distress among young, economically active adults (Nasir et al., 2025). The mediator of financial stress may be an increase in perceptions of vulnerabilities, decrease in coping self-efficacy, depletion of attentional resources, and perpetuation of anticipatory worry. This can then trigger economic

concerns that can turn into a proximal pathway to climate anxiety. Chronic financial stress can also direct focus on survival issues, reducing emotional resources to deal with uncertainty and reducing the ability to adaptively process climate-related information.

Social support as a potential buffer

Social support can take a form of a direct-effect model (where supportive relationships are typically beneficial) or buffer model (where support specifically buffers the impact of stress on well-being) (Acoba, 2024). These propositions are separate—they don't constitute moderation if they're a beneficial main effect. When implemented in the context of climate anxiety, emotional support can lead to decreased isolation, informational support can help to increase understanding of risk, tangible support can help recovery, and belongingness can foster increased collective efficacy. Interventions for climate anxiety thus focus both on social connection and individual coping (Bingley et al., 2022; Xue et al., 2024).

However, a weak moderation can take place if there is a mismatch between support and stressor. General reassurance may not be enough to offer the financial, technical, institutional and climate-specific support that is needed by environmental threats. Exposure can also make family and community resources limited, and repeated discussion can normalize concern without diminishing threat salience. Restricted range and measurement error represent an additional source of sensitivity of interaction effects. The climate belief-anxiety slope can therefore be influenced by social support, either through coping or efficacy, or through more material support, but not directly by social support. This may thus mean that perceived closeness does not decline in a collectivistic context even if the networks do not have access to the resources needed to lower the vulnerability to climate change, such as financial resources, housing, transport, or institutional access.

Integrated framework and research rationale

The integrated framework includes environmental appraisal, as well as economic vulnerability and interpersonal resources. Climate beliefs involve what is personally perceived as a threat, financial stress involves perceived constraints on economic coping and recovery, and social support involves a potential contextual resource. This structure is important for Pakistan, where climate hazards are combined with the impact of inflation, job insecurity, reliance on the rural economy, unequal infrastructure, and absence of formal safety nets. The mostly rural and more disadvantaged nature of the sample is particularly important in terms of the proposed economic pathway.

The model can also differentiate related but different statistical proposals. Mediation examines whether financial strain plays a part in the relationship between climate belief and anxiety, while moderation examines whether the size of the relationship varies by a financial strain level. There is also some longitudinal evidence that negative climate feelings can become functional impairment over time (Chan et al., 2024) and psychometric synthesis studies suggest that there are dimensions of climate-anxiety that relate to one another but are not exactly the same (Hogg et al., 2023). Based on this, the present study defines climate anxiety as climate change worry and is interpreted with a cautious approach in a cross-sectional study design. This approach is integrated and allows a more targeted evaluation of whether the economic stress accounts for a portion of the association and if interpersonal resources alter the degree of the association. The framework is also contextually relevant with the sample. Participants came from districts where flooding had become a topic of interest due to high rainfall during the monsoon season and where the mobility and protection of property had become a focus of recovery from flooding at the household level. While individual disaster exposure was not assessed, this environment is relevant for studying the intersections of environmental awareness and economic responsibility. Context is thus not seen as evidence of direct

climate loss for all respondents, but rather as a point of salience.

Method

Research design

The survey method was used and the design is quantitative, cross sectional and correlational. This design was suitable for the estimation of associations between climate belief and climate anxiety, financial stress and social support, and also for testing regression-based indirect and interaction effects. All variables were measured at one time, so causal and temporal claims were not made.

Participants and setting

The analytic sample consisted of 300 adults of Chakwal and Jhelum districts of Pakistan. The participants were selected using convenient sampling and were accepted if they were adults and lived in the study area and they said they were financially independent or they were responsible for their personal financial duties. Age was divided into 6 categories; 18-25 years, 26-30 years, 31-44 years, 45-55 years and 56 years and older. The sample consisted of students and working adults, both of whom have financial responsibilities. The majority of the participants (78.7%) were residing in villages and 71.3% reported that their monthly income was less than PKR 60,000. The characteristics are detailed in table 1.

Residential exposure to a recent salient 2025 monsoon period of heavy rainfall and flooding concerns was used to help choose the geographic context. Data collection was done in the months of August and September 2025, immediately following the July monsoon described in the source protocol. This study lacked an objective measure of disaster exposure at the individual level and location and timing is treated as context rather than as evidence that everyone in the study lost something.

Measures

Climate belief. The Climate Change Perceptual Awareness Scale framework (Cipriani et al., 2024) was used to measure climate belief using 19 items. Rating responses were along a scale from 1 (never) to 5 (very frequently), and the total score for items ranged from 19 to 95. Higher scores indicated greater frequency of noticing signs of climate change that were physical, affective, and public discourse. In the present sample, Cronbach's alpha was .85. Climate anxiety. The Climate Change Worry Scale (Stewart, 2021) was used to measure climate anxiety (10 items). Responses were from 1 (never) to 5 (very frequently) and could yield a total score of 10 to 50. The scores were higher for those who were more likely to perceive personal and relationship impacts from climate change. Cronbach's alpha was .82.

Financial stress. A 10-item study measure was used to measure financial stress, with scores from 1 (never) to 5 (very frequently) ranging from 10 to 50. The source protocol reported content on financial stress, financial hardship, financial worry that can't be controlled, physical and/or cognitive effects of financial worries. This is consistent with financial-strain and financial-anxiety research, which has not been recorded on a single published 10-item source instrument (Nasir et al., 2025), however. A higher score indicated a higher financial stress. Cronbach's alpha was .78. Social support. The 12 items of perceived social support were rated on a 4-point scale, ranging from 1 (absolutely false) to 4 (absolutely true) for a maximum score of 48 and a minimum of 12. The higher total supplies scores the higher perceived support. The item measured interpersonal resources (advice, companionship, and assistance) using the functional social-support tradition (Acoba, 2024). The internal consistency was modest with a Cronbach's alpha of .58. Therefore, results on this measure, particularly the interaction test were interpreted with caution.

Procedure and ethical considerations

The two districts were approached in community and education setting only to those who were eligible to take part. The study is aimed at explaining the purpose of the study, voluntary participation and informed consent was obtained prior to completing the questionnaire. Advise participants that

they may refuse or withdraw from participation without punishment. The analytic data that was used did not include personally identifying information, and responses were analyzed in aggregate. The source protocol refers to approval prior to data collection from the institutional level and from the ethical level, and it does not provide any approval number in the materials provided for article preparation.

Data analysis

IBM SPSS Statistics 26 was used for data analysis. First, descriptive statistics and frequency distributions were analyzed, then Cronbach's alpha and Pearson correlations. Simple linear regression was used to determine the relationship between climate belief and climate anxiety. Mediation was tested using Hayes PROCESS Model 4 with climate belief as X, financial stress as M, and climate anxiety as Y; Social support was mean-centered prior to creating the interaction term and was tested as the moderator in PROCESS Model 1 with climate belief as X. The 5,000 bootstrap samples were used in both models. In addition to regression and interaction effects, which were assessed at $p < .05$, an indirect effect was considered significant if its 95% bootstrap confidence interval contained values other than zero. The data presented are unstandardized estimates—standardized estimates are included when available. Although all measures were taken at one time point, important indirect effects were interpreted statistically as a mediation effect instead of as a causal effect, due to the timing (Hayes, 2022). The separation of total, direct and indirect effects and the reporting of confidence intervals were used to enhance interpretive precision; significance levels were not reported. The moderation analysis focused on the interaction coefficient and change in explained variance since a significant overall model does not show moderation. In this data, climate belief was a strong predictor, but did not explain any further variance when included with social support. The null interaction was thus reported transparently and understood within the limitations of the measurements and the contexts.

Results

Sample profile and data screening

There were 300 complete cases for the final analytic dataset for climate belief, climate anxiety, financial stress, and social support. There were no cases where composite scores were missing that were excluded from the primary analyses. The sample was not homogenous and fairly young and rural. The age group 18–25 years accounted for almost half of the respondents (48.0%), 56.3% of respondents were students, 52.7% were males and 78.7% of respondents were living in rural or village area. Of the respondents, 71.3% had an income of less than PKR 60,000 per month. These characteristics are pertinent because the younger the age of the adult, the more likely they are to be a student, live in a rural area, or have a lower income, which can lead them to be vulnerable to environmental hazards as well as unstable jobs, savings deficits, and lack of access to local infrastructure. The complete demographic distribution is given in Table 1.

Table 1: Demographic characteristics of participants (N = 300)

Characteristic	Category	N	%
Occupation	Student	169	56.3
	Working	131	43.7
Age (years)	18-25	144	48.0
	26-35	72	24.0
	36-45	44	14.7
	46-55	31	10.3
	56 and above	9	3.0

Characteristic	Category	N	%
Gender	Male	158	52.7
	Female	142	47.3
Area of residence	Urban/city	64	21.3
	Rural/village	236	78.7
Marital status	Unmarried	151	50.3
	Married	143	47.7
	Divorced	3	1.0
	Widowed	3	1.0
Family system	Extended	142	47.3
	Nuclear	158	52.7
Education	Matric or less	82	27.3
	Intermediate	83	27.7
	Bachelor's	54	18.0
	Master's	72	24.0
	MPhil/PhD	9	3.0
Monthly income (PKR)	Below 30,000	105	35.0
	30,000-60,000	109	36.3
	60,000-100,000	55	18.3
	100,000-150,000	17	5.7
	Above 150,000	14	4.7

Note. Percentages may not total 100 because of rounding. Labels were standardized from the supplied SPSS dataset.

Descriptive statistics and reliability

Climate belief scores averaged 61.35 (SD = 12.29) out of a possible range of 19–95, and climate anxiety scores averaged 31.15 (SD = 6.86) out of a possible range of 10–50. Financial stress had a mean of 26.84 (SD = 7.13), and social support had a mean of 33.25 (SD = 5.08). Very large ranges were observed for the scores on each of the scales, thus allowing for adequate variability for correlational and regression analysis. There was no severe univariate skewness as values ranged from -0.34 to 0.67. Climate belief ($\alpha = .85$) and climate anxiety ($\alpha = .82$) had good internal consistency, and financial stress ($\alpha = .78$) and social support ($\alpha = .58$) were acceptable. This lower social-support reliability is significant because measurement error will cause the main and interaction estimates to be less precise, and also will make the moderation test conservative. These results are summarised in Table 2.

Table 2: Descriptive statistics, score ranges, distribution, and internal consistency

Variable	Items	Possible range	M	SD	Observed range	Skew	A
Climate belief	19	19–95	61.35	12.29	23–86	-0.34	.85
Climate anxiety	10	10–50	31.15	6.86	10–46	0.02	.82
Financial stress	10	10–50	26.84	7.13	10–49	0.32	.78
Social support	12	12–48	33.25	5.08	19–48	0.67	.58

Note. Alpha = Cronbach's alpha. The social-support coefficient was below the conventional .70 benchmark; moderation results were interpreted cautiously.

Correlations among study variables

The Pearson correlations for climate belief and climate anxiety were positive and expected, with $r = .641$, $p < .001$. This is the largest bivariate association in the matrix and is a strong association: those who said they were more aware of changes in the climate also said that they were much more worried about climate change. Financial stress was positively correlated with climate belief, $r = .275$; $p < .001$, meaning that the higher the level of financial stress, the more financial concern was associated with climate belief. There were also two bivariate associations between financial stress and climate anxiety, $r = .393$, $p < .001$, needed to propose a mediation pathway. Financial stress was inversely associated with social support, $r = -.202$, $p < .001$, and climate belief, $r = .278$, $p < .001$ were directly associated with social support, while climate anxiety was directly associated with social support, $r = .167$, $p < .01$. The latter positive correlation does not indicate harm of support, as support scores may be stronger among those who express concerns and/or request support when distressed, and this may be noted cross-sectionally. The complete matrix is given in Table 3.

Table 3: Pearson correlations among climate belief, climate anxiety, financial stress, and social support

Variable	1	2	3	4
1. Climate belief	-			
2. Climate anxiety	.641***	-		
3. Financial stress	.275***	.393***	-	
4. Social support	.278***	.167**	-.202***	-

Note. $N = 300$. ** $p < .01$. *** $p < .001$, two-tailed.

Direct effect of climate belief on climate anxiety

The direct predictive value of climate belief was tested using simple linear regression. The model was statistically significant, $F(1, 298) = 208.34$, $p < .001$, with $R = .641$ and $R^2 = .4115$. This means that around 41.2% of the variance in the observed climate anxiety was attributed to the belief in climate change. The unstandardized coefficient was $b = .3580$ ($SE = .0248$), $\beta = .6415$, $t = 14.43$, $p < .001$, 95% CI [.3092, .4068]. Climate belief, as measured, was estimated to correspond to .358-point changes in climate anxiety for each one-point change. This means that the climate belief gap of 10 points equaled a mean climate anxiety gap of 3.58 points on the 10–50 scale. The confidence interval was small and completely positive which confirmed Hypothesis 1 and 2. The model summary and coefficient are presented in table 4.

Table 4: Simple regression model predicting climate anxiety from climate belief

Model component	Estimate	SE	β	t / F	p	95% CI
Model fit	R = .6415; R ² = .4115; Adjusted R ² = .4095	—	—	F(1, 298) = 208.34	< .001	—
Climate belief	b = .3580	.0248	.6415	t = 14.43	< .001	[.3092, .4068]

Note. Outcome = climate anxiety. The coefficient confidence interval is 95%.

Mediation analysis: financial stress

Mediation analysis was then used to assess if the financial stress–climate belief–anxiety relationship was statistically mediated. In the mediator model, climate belief significantly predicted financial stress, $b = .1598$, $SE = .0323$, $t = 4.95$, $p < .001$, 95% CI [.0962, .2234], and explained 7.59% of its variance, $F(1, 298) = 24.46$, $p < .001$. In the outcome model, financial stress remained a significant predictor of climate anxiety after climate belief was controlled, $b = .2252$, $SE = .0426$, $t = 5.29$, $p < .001$, 95% CI [.1414, .3090]. Climate belief also retained a significant direct effect, $b = .3220$, $SE = .0247$, $t = 13.03$, $p < .001$, 95% CI [.2734, .3706]. The total-effect model accounted for 41.11% of the variance in climate anxiety and, when combined with financial stress, accounted for 46.21% of the variance in climate anxiety, $F(2, 297) = 127.59$, $p < .001$, which was an increase of ~5.1 percentage points.

The indirect effect via financial stress was .0360 (BootSE = .0117) with a 95% CI of [.0156, .0620]. The indirect effect was found to be statistically significant and hypothesis 3 was confirmed as the interval was not null. The indirect effect was completely standardized at .0645 (95% bootstrap CI [.0285, .1099]). The indirect component accounted for about 10.1% of the total unstandardized effect (.0360/.3580), while the direct component was still significant. This is therefore only a statistical mediation and not a complete one. It suggests that financial stress is one important route, but climate belief is also linked to climate anxiety via other emotional, ecological, social and institutional issues. Due to all variables being measured at one point in time, the pathway should not be interpreted as a causal relationship between climate belief causing financial stress and then causing anxiety. The complete mediation estimates are shown in Table 5.

Table 5: Regression paths and bootstrap indirect effect in the financial-stress mediation model

Model/effect	Path	b	SE/BootSE	t	p	LLCI	ULCI	beta/std. indirect
Mediator model	Climate belief -> Financial stress	.1598	.0323	4.95	< .001	.0962	.2234	.2754
Outcome model	Financial stress -> Climate anxiety	.2252	.0426	5.29	< .001	.1414	.3090	.2342
Total effect	Climate belief -> Climate anxiety (c)	.3580	.0248	14.43	< .001	.3092	.4068	.6415
Direct effect	Climate	.3220	.0247	13.03	< .001	.2734	.3706	.5770

Model/effect	Path	b	SE/BootSE	t	p	LLCI	ULCI	beta/std. indirect
	belief -> Climate anxiety (c')							
Indirect effect	Climate belief -> Financial stress -> Climate anxiety	.0360	.0117	-	-	.0156	.0620	.0645

Note. Mediator model: $R^2 = .0759$, $F(1, 298) = 24.46$, $p < .001$. Outcome model: $R^2 = .4621$, $F(2, 297) = 127.59$, $p < .001$. Indirect-effect confidence intervals are based on 5,000 bootstrap samples.

Moderation analysis: social support

A moderation analysis was used to determine if the climate belief-anxiety slope differed by social support levels. The full model was significant, $F(3, 296) = 69.05$, $p < .001$, $R^2 = .4117$, largely because climate belief remained a strong predictor, $b = .3595$, $SE = .0260$, $t = 13.85$, $p < .001$. The main effect of centered social support was nonsignificant, $b = -.0116$, $SE = .0673$, $t = -.17$, $p = .864$, 95% CI $[-.1441, .1209]$. Most importantly, the climate belief by social support interaction was nonsignificant, $b = -.0012$, $SE = .0050$, $t = -.23$, $p = .818$, 95% CI $[-.0111, .0087]$. The interaction added only .0001 to R^2 , $F_{change}(1, 296) = .053$, $p = .818$. The 95 per cent confidence interval ranged from negative to positive values and intersected zero, suggesting that there was no consistent evidence that the positive climate belief-anxiety relationship strengthened or weakened at higher levels of support.

To illustrate the point descriptively, the estimated climate-belief slope was approximately .365, .360, and .354 for having social support one standard deviation below, at, and above the mean level of social support, respectively. These values are almost parallel and support the inferences. Hypothesis 4 was thus rejected. As noted above, this does not imply that social relationships are not relevant; it simply means that there was no significant change in the strength of the specific climate belief-anxiety association within this sample when the general support score was provided. The null interaction is likely due to shared community vulnerability, low material resources, general support that may not apply to the specific needs of the climate, or the measure of support is only somewhat effective. The moderation coefficients and the model statistics are presented in Table 6 and the summary of all hypothesis decisions is presented in Table 7.

Table 6: Moderation of the climate belief-climate anxiety relationship by social support

Predictor	b	SE	t	p	LLCI	ULCI
Climate belief	.3595	.0260	13.85	< .001	.3084	.4106
Social support	-.0116	.0673	-.17	.864	-.1441	.1209
Climate belief x Social support	-.0012	.0050	-.23	.818	-.0111	.0087

Note. Model $R^2 = .4117$, $F(3, 296) = 69.05$, $p < .001$. Interaction delta $R^2 = .0001$, $F(1, 296) =$

.053, $p = .818$. Climate belief and social support were mean-centered.

Summary of hypothesis testing

Table 7: Hypothesis decisions based on the statistical analyses

Hypothesis	Proposition	Statistical evidence	Decision
H1	Climate belief is positively associated with climate anxiety.	$r = .641, p < .001$	Supported
H2	Climate belief significantly predicts climate anxiety.	$b = .3580, \text{beta} = .6415, p < .001$	Supported
H3	Financial stress mediates the climate belief-anxiety relationship.	Indirect $b = .0360$, 95% CI [.0156, .0620]	Supported
H4	Social support moderates the climate belief-anxiety relationship.	Interaction $b = -.0012$, $p = .818$	Not supported

Note. A supported mediation hypothesis indicates a significant bootstrap indirect effect, not proof of temporal causality in a cross-sectional design.

Discussion

Principal findings and direct relationship

The findings showed high positive correlation between financial independence and climate belief and anxiety among the adults in Chakwal and Jhelum. Awareness of physical changes, emotional reactions, and public discussion regarding climate were strongly associated with anxiety, and accounted for about 41% of the variation in that anxiety. This outcome is found to be congruent with cognitive appraisal theory which states that environmental information becomes emotionally significant when it is seen as personally relevant, serious, uncontrollable and uncertain. It also fits with the evidence that shows a correlation between exposure, climate concern and negative climate emotions (Cosh et al., 2024; Ogunbode et al., 2021; Stewart, 2021).

The strength of the link is no justification for lessening climate awareness. A correct understanding of facts is fundamental to planning and community response. The real question is: Are there any realistic options for coping if they're accompanied by awareness? If communicating danger without warning about protection, adaptation, and available assistance in climate-sensitive contexts, then it can reinforce feelings of helplessness and repetitive worry. Risk messages should, therefore, take a combination of verified information and realistic household, community and institutional responses. In this way, the importance of being aware is preserved, and at the same time the danger of bearing true information as an unavoidable danger is minimized.

Financial stress as a mediator

Financial stress was a significant part of the relationship between climate belief and climate anxiety. After controlling for climate belief, financial stress was positively associated with anxiety; and higher climate belief was associated with more financial stress. There was also a direct effect that was not fully mediated, meaning there was some partial mediation. Theoretically this pattern makes sense as climate risks can impact on employment, transport, agricultural income, food prices, property, health expenditure, savings, and recovery costs. Concern about environmental uncertainty can turn into an

affordability and security concern for adults who take care of their own or their family's finances. Anxiety over climate change is included in the social determinants of mental health in the mediation finding. Emotional checks can be helpful to prevent worry, but these can remain if economic insecurity isn't addressed. Counselling therefore should be linked to disaster responsive financial support, livelihood continuity, compensation, house repair, financial support, and accessible insurance. The indirect effect went in the opposite direction to the direct, and was smaller, suggesting that financial stress was a pathway to change, but not the only one; family safety, ecological loss, health, institutional trust, and perceived irreversibility may be contributing. Since the design was cross-sectional, the results should be interpreted as an important statistical pathway which needs longitudinal confirmation. It also promotes coordination of the mental health services, disaster management institutions, employers and social protection agencies and not a clinical response.

Interpreting nonsignificant moderation

There was no significant interaction between the climate belief-anxiety relationship and social support. The buffering hypothesis was not supported as the positive slope was almost the same at low, average, and high levels of support. This doesn't mean relationships are not important. It indicates that the general perceived-support score was not a reliable predictor of the strength of this specific association. One of the reasons is likely to be functional mismatch the emotional support and companionship might be comforting without diminishing concerns over job security, housing, food prices, disaster losses, and long-term climate risks.

Another explanation for the null interaction is that both variables measure the same vulnerability. The majority of participants were rural residents and their earnings were in the middle range, suggesting that family members and community members may have experienced similar environmental and economic pressures and had limited resources to support them. Moreover, the internal consistency of the social-support scale was modest ($\alpha = .58$), further limiting precision and particularly complicating the interactions. The right conclusion is then that there was no moderation observed in this data set. Future studies could evaluate culturally approved measures of emotional support, informational support, tangible support, community support, and climate-specific support, instead of considering all types of support as interchangeable. Replication should also investigate direct protective effects or indirect effects through coping efficacy and access to resources through the lens of support.

Theoretical and contextual contributions

The results complement the cognitive appraisal theory by adding an economic secondary-appraisal pathway: financial stress. Climate belief is a sense of threat, and financial stress is a sense of limited resources needed for adaptation and recovery. The results of significant mediation and nonsignificant moderation indicate that material and interpersonal resources may affect the process in different ways. Financial stress had an impact on part of the association, while general support had no effect on the strength of the association.

This study also provides evidence from the Global South where ecological and economic threats are closely linked. Climate anxiety in lower-resource countries can't be analyzed solely from an individual emotional or environmental attitude lens but also from a lens that encompasses livelihoods, social protection, infrastructure, and institutional capacity. Emotional support, practical assistance, savings, insurance, secure employment, compensation, and collective efficacy should be separated in future studies of the relationship between conditional processes and financial stress and/or feelings of control or anxiety, and tested for direct effects on anxiety. These distinctions can help to explain what resources are psychologically protective before, during, and after the disruption caused by climate change.

Practical and Policy Implications

Results have implications for practitioners in Mental Health, Disaster Management, policy makers, employers and community groups. Financial issues, such as debt, unstable jobs, repair costs, increasing household expenditures, and limited adaptation resources are part of climate anxiety that should be assessed. Climate-aware counseling can address distress and minimize negative ruminations, enhance problem-focused coping, but referral pathways should also link people to financial counseling, social-welfare options, livelihood support, and disaster response. Employers and educational providers should also be aware that the anxiety surrounding climate change could be exacerbated by issues such as attendance, income security, transport and family responsibilities.

The message should be accurate and effective when communicating with the public about climate risks. Authorities and media should refrain from using sensational and unverified meteorological statements and explain what can be known, what cannot, who is vulnerable, and what measures can be taken to protect them. Community programs should go beyond simply providing reassurance, creating emergency savings groups, sharing plans for mutual help, arrangements for transportation, safe places, and connections to local services. This practical support can be more meaningful than providing overall support for lessening worry about climate change. Support from local religious, civic and health organizations can facilitate dissemination, if messages are evidence-based and tied to concrete services.

Policy level, Financial protection should be considered a component of mental-health prevention. Quick cash transfers, clear and fair remuneration, rehabilitating livelihoods, low-cost insurance, credit restructuring and housing assistance can mitigate both material distress and expected suffering. Incorporating indicators for mental health, and assessing the long-term impact of financial security measures, preparedness training and collective efficacy on long-term reduction of distress, are thus relevant for climate adaptation plans. Considering these measures with anxiety outcomes would also bolster the evidence base for policies that provide economic and psychological protection.

Limitations and Directions for Future Research

There are several limitations with the findings. This cross-sectional study does not allow for conclusions of temporal order or causality, convenience sampling reduces the representativeness of the results, and the predominantly rural sample should not be extrapolated to other Pakistani adults. Common-method and social-desirability bias might have been introduced in self-report measures. The study also failed to include indicators of individual exposure to disasters, property damage, previous trauma, overall anxiety, media exposure, environmental behavior and trust in institutions. Financial independence also needs to be defined more accurately, as it includes financial independence for students as well as financial independence for working adults, and the financial independence requirements can vary significantly.

Measurement is a crucial area of concern. The social-support scale had an acceptable internal consistency, and the provided materials failed to locate a published source of the 10-item financial-stress scale. There is a need for future studies to use locally validated Urdu and English questionnaires, to establish reverse coding, report the translation process, and to carry out confirmatory factor analysis. Longitudinal, probability-based and multi-province research should include psychological metrics, objective measures of exposure and economic indicators, testing a number of mediators, and determine if financial assistance, preparedness and climate-specific support reduces anxiety. Occupational and income groups should be compared in future analyses, measurement invariance should be examined, and if there were more reliable measures of support, future analyses should incorporate them to see whether the nonsignificant moderation finding changes.

Conclusion

It is found that climate belief is highly correlated with climate anxiety among financially independent adults in Chakwal and Jhelum. Those that were more likely to identify physical changes and emotional reactions to climate change, as well as to discuss the issue in public, also had higher levels of worry. Those who were more likely to identify physical changes and emotional reactions to climate change, as well as discussing the issue in public, also reported higher levels of worry. The pattern should not be read as an indicator that awareness is not desirable, but instead as an indication that when coping options are therefore somewhat constricted, having an accurate awareness of a persistent and hard-to-control threat may have a significant psychological cost. The direct link, which is strong, thus suggests that climate awareness should be studied with special care, without pathologizing it.

Financial stress was a key partial explanation of this relationship. More climate belief was correlated with greater financial stress, and financial stress was still correlated with anxiety after controlling for climate belief. Climate risks are thus felt not just as environmental issues, but as issues regarding employment, household costs, properties, saving, dependent and recovery capacity. The outcome focuses on vulnerability as a material condition as well as on the emotional aspect of climate anxiety as a personal reaction. Economic security policies can then help decrease one of the pathways that can transform environmental threat into sustained concern.

No significant moderation of the climate belief-anxiety association was found for social support. There was no significant change in the relationship over the observed support levels. This is not to say that social relationships are not valuable in their own right, it is only to say that this particular pathway did not show a buffering effect with respect to the general perceived support. The shared community exposure, small size of the material resources, and the small level of reliability of the support measure could have played a role, and future research should focus on culturally validated, climate specific and tangible types of support. The null result is scientifically valuable in that it neither enables a simple claim such as "interpersonal connection is sufficient to prevent the structural causes of climate distress" nor allows for the claim that it is not.

In general, there is a need for a comprehensive psychological, financial, community, and policy response to climate mental health in Pakistan. Disaster preparedness, livelihood protection, disaster assistance, and services that are accessible and available should be tied to counseling and risk communication. Financial protection and/or climate-specific collective efficacy may be shown to decrease distress through longitudinal and multi-province studies. The balance of the central thesis is well struck between the need for awareness and the psychological implications of this awareness, which are dependent on the economic and institutional resources available to deal with the expected harm. Emotional experience and material vulnerability both must be addressed to have the most convincing route to climate resilience and psychologically sustainable adaptation.

Acknowledgment

The author(s) would like to thank the Professor Dr Sumayya Batool, University of Sargodha, for her immense guidance and support in this research. Her outstanding skills were crucial in determining what variables to use and selecting them in the study. The author(s) would also like to thank her for taking her time and effort reviewing the introduction part of the article. She was constantly motivated and had the insight and a passion for research that gave inspiration and sustained commitment at every stage of the work.

Declarations

Conflict of interest: The author(s) declare no conflict of interest.

Funding: No external funding was reported in the materials supplied for this study.

Data availability: The data are available from the corresponding author subject to ethical and institutional requirements.

Ethics statement: Participation was voluntary, informed consent was obtained, and responses were

analyzed confidentially. The institutional approval number was not included in the supplied source materials and should be confirmed in the journal submission metadata.

References

- Acoba, E. F. (2024). Social support and mental health: The mediating role of perceived stress. *Frontiers in Psychology*, 15, 1330720. <https://doi.org/10.3389/fpsyg.2024.1330720>
- Associated Press of Pakistan. (2025, July 21). PMD rejects claims of 423mm rainfall and cloudburst in Chakwal.
- Bingley, W. J., Tran, A., Boyd, C. P., Gibson, K., Kalokerinos, E. K., Koval, P., Kashima, Y., McDonald, D., & Greenaway, K. H. (2022). A multiple needs framework for climate change anxiety interventions. *American Psychologist*, 77(7), 812-821. <https://doi.org/10.1037/amp0001012>
- Chan, H.-W., Lin, L., Tam, K.-P., & Hong, Y.-Y. (2024). From negative feelings to impairments: A longitudinal study on the development of climate change anxiety. *Journal of Anxiety Disorders*, 107, 102917. <https://doi.org/10.1016/j.janxdis.2024.102917>
- Cipriani, E., Gemignani, A., & Menicucci, D. (2024). Awareness of everyday effects of climate change: The Climate Change Perceptual Awareness Scale (CCPAS). *Heliyon*, 10(19), e38461. <https://doi.org/10.1016/j.heliyon.2024.e38461>
- Coffey, Y., Bhullar, N., Durkin, J., Islam, M. S., & Usher, K. (2021). Understanding eco-anxiety: A systematic scoping review of current literature and identified knowledge gaps. *The Journal of Climate Change and Health*, 3, 100047. <https://doi.org/10.1016/j.joclim.2021.100047>
- Cosh, S. M., Ryan, R., Fallander, K., Robinson, K., Tognela, J., Tully, P. J., & Lykins, A. D. (2024). The relationship between climate change and mental health: A systematic review of the association between eco-anxiety, psychological distress, and symptoms of major affective disorders. *BMC Psychiatry*, 24, 833. <https://doi.org/10.1186/s12888-024-06274-1>
- Crandon, T. J., Scott, J. G., Charlson, F. J., & Thomas, H. J. (2024). A theoretical model of climate anxiety and coping. *Discover Psychology*, 4, 94. <https://doi.org/10.1007/s44202-024-00212-8>
- Daraz, U., Khan, Y., Alsawalqa, R. O., Alrawashdeh, M. N., & Alnajdawi, A. M. (2024). Impact of climate change on women mental health in rural hinterland of Pakistan. *Frontiers in Psychiatry*, 15, 1450943. <https://doi.org/10.3389/fpsyg.2024.1450943>
- Government of Pakistan, Asian Development Bank, European Union, United Nations, & World Bank. (2022). Pakistan floods 2022: Post-disaster needs assessment.
- Hayes, A. F. (2022). Introduction to mediation, moderation, and conditional process analysis: A regression-based approach (3rd ed.). Guilford Press.
- Hickman, C., Marks, E., Pihkala, P., Clayton, S., Lewandowski, R. E., Mayall, E. E., Wray, B., Mellor, C., & van Susteren, L. (2021). Climate anxiety in children and young people and their beliefs about government responses to climate change: A global survey. *The Lancet Planetary Health*, 5(12), e863-e873. [https://doi.org/10.1016/S2542-5196\(21\)00278-3](https://doi.org/10.1016/S2542-5196(21)00278-3)
- Hogg, T. L., Stanley, S. K., & O'Brien, L. V. (2023). Synthesising psychometric evidence for the Climate Anxiety Scale and Hogg Eco-Anxiety Scale. *Journal of Environmental Psychology*, 88, 102003. <https://doi.org/10.1016/j.jenvp.2023.102003>
- Intergovernmental Panel on Climate Change. (2022). Climate change 2022: Impacts, adaptation and vulnerability. Cambridge University Press.
- Intergovernmental Panel on Climate Change. (2023). Climate change 2023: Synthesis report. IPCC.
- Larionow, P., Gawrych, M., Mackiewicz, J., Michalak, M., Mudlo-Glagolska, K., Preece, D. A., & Stewart, A. E. (2024). The Climate Change Worry Scale and its links with demographics and mental health outcomes in a Polish sample. *Healthcare*, 12(11), 1128.

- <https://doi.org/10.3390/healthcare12111128>
- Nasir, A., Javed, U., Hagan, K., Chang, R., Kundi, H., Amin, Z., Butt, S., Al-Kindi, S., & Javed, Z. (2025). Social determinants of financial stress and association with psychological distress among young adults 18-26 years in the United States. *Frontiers in Public Health*, 12, 1485513. <https://doi.org/10.3389/fpubh.2024.1485513>
- Ogunbode, C. A., Doran, R., Hanss, D., Ojala, M., Salmela-Aro, K., van den Broek, K. L., Bhullar, N., Aquino, S. D., Marot, T., Schermer, J. A., Wlodarczyk, A., Lu, S., Jiang, F., Maran, D. A., Yadav, R., Ardi, R., Chegeni, R., Ghanbarian, E., Zand, S., ... Karadzhov, D. (2021). Climate anxiety, wellbeing and pro-environmental action: Correlates of negative emotional responses to climate change in 32 countries. *Journal of Environmental Psychology*, 74, 101575. <https://doi.org/10.1016/j.jenvp.2021.101575>
- Stewart, A. E. (2021). Psychometric properties of the Climate Change Worry Scale. *International Journal of Environmental Research and Public Health*, 18(2), 494. <https://doi.org/10.3390/ijerph18020494>
- World Health Organization. (2022). Mental health and climate change: Policy brief. World Health Organization.
- Xue, S., Massazza, A., Akhter-Khan, S. C., Wray, B., Husain, M. I., & Lawrance, E. L. (2024). Mental health and psychosocial interventions in the context of climate change: A scoping review. *npj Mental Health Research*, 3, 10. <https://doi.org/10.1038/s44184-024-00054-1>