

CLIMATE DISASTER EXPOSURE, ECO-ANXIETY, AND HOPE AMONG PAKISTANI YOUTH: AGENCY AND TRUST AS MODERATORS

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ABSTRACT

KEYWORDS:

Climate Change, Climate-Induced Disasters, Climate-Change Hope, Eco-Anxiety, Perceived Agency, Political Trust

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Climate change is increasingly recognized as a psychological as well as environmental challenge, and the vulnerability of the younger generation in Pakistan due to the adverse effects of climate change is of particular concern. This study examined the relationship between distress associated with exposure to climate disasters, climate-change hope, and Eco-anxiety among Pakistani youth and the moderating role of political trust and perceived agency. A cross-sectional, correlational survey design was used, and data were collected from 255 young adults aged 18-29 from educational institutions and social media. Participants filled out validated scale measures on levels of disaster-related distress, political trust, sense of agency, eco-anxiety, and climate change hope. Data were analyzed using IBM SPSS v.25. Model results revealed that disaster distress was a significant positive predictor of eco-anxiety, but not climate change hope. Additionally, none of the hypothesized moderations were supported by the results, pointing to alternative mechanisms of the development of eco-anxiety, as well as climate change hope among the sample. The study may help to inform interventions towards building youth agency, enhancing communication of trauma-informed messages, and enhancing institutional trust.

I. INTRODUCTION

In recent years, climate change has shifted from being a purely environmental concern to a psychological one. Climate anxiety is a predominantly youth concern, most prevalent in the young-adult group (Hickman et al., 2021), and may arise through vicarious exposure through media or secondhand accounts (Oz & Cona, 2024). Pakistan possesses a unique position, as it is among the top 10 most vulnerable countries among global vulnerability indices (World Bank, 2024), and has a recurring history of damage in the face of climate disasters e.g., floods, earthquakes, heatwaves etc. (Akram, 2026; Khetrn, 2024), without adequate recovery windows. The agricultural sector is vulnerable to irregular weather patterns, droughts and heatwaves (Khan et al., 2024), and young people

share that they are worried about missed educational opportunities and uncertain job prospects for the future (Hundal & Bizenjo, 2024). Climate disaster exposure may be conceptualized in terms of the distress caused, building on Elal and Slade (2005)'s, and is defined as the psychological strain caused as a result of the direct or indirect exposure to climate-related disasters such as floods, earthquakes, and heatwaves etc., resulting in loss, displacement and daily life disruption (Berry et al., 2010; Cianconi et al., 2020). It may also result in eco-anxiety, which is defined as the worry, distress or apprehension felt by people in response to climate change (Hogg et al., 2021). It cannot be termed as a clinical disorder, but it is an understandable response to ecological threat, affecting daily functioning (Coffey et al., 2021). By contrast, climate change hope is a forward-looking and adaptive orientation, the belief in the possible resolution of climate problems and possibility of meaningful action, and is therefore linked with greater coping and engagement (Li & Monroe, 2018; Ojala, 2021). Political trust refers to the level of confidence people have in political institutions, leaders, government, and the political system (Dodsworth & Cheeseman, 2020). With its youth bulge, Pakistani youth play an important role in the Pakistani political landscape, and trust in said politics can be influenced by political instability, corruption, unemployment, governance problems, social media, and the performance of political leaders (Vallier, 2022). Additionally, an individual's sense of control/agency is a key determinant in the likelihood of taking proactive steps as a result of climate anxiety (Wamsler et al., 2022). Self-efficacy, as theorized by Bandura (Bandura, 2001), is prominently referenced, and is a key factor in resilience and overcoming feelings of helplessness (Innocenti et al., 2023).

II. LITERATURE REVIEW

A growing body of empirical research has examined youths' experience of psychological distress in response to climate change and climate-induced disasters, and findings indicate key patterns such as intensified vulnerability among youth, excessive suffering in the Global South, the role of disaster exposure in severe distress, and the coping strategies adopted to manage it. The link between exposure to climate disasters and distress outcomes is well-established (Bakul et al., 2025), and is dependent on contextual factors such as socioeconomic vulnerability and limited climate-action opportunities (Tsevreni et al., 2023; Vercammen et al., 2023a), geographical bearing (Cosh et al., 2024), age and gender (Clayton et al., 2022). Even indigenous research evidence consistently shows eco-anxiety as a measurable impact, related to poorer mental health, generalized anxiety disorder, and major depressive disorder (Soomro et al. 2024) and solastalgia, a form of existential distress to climate impacts (Abbas et al. 2025). Pakistani youth score significantly high on climate anxiety but rather low on pro-environmental behavior compared to Japan, Germany, and Kenya, attributed to socio-economic barriers, lower environmental education, and institutional barriers to civic engagement (Ahmed 2025). Institutional trust has also been found to wear down over time in flood-prone households, due to repeated exposure, which drains one's sense of control and institutional distrust traps people in inaction (Ahmed et al. 2026). However, institutional trust also mediates the effect of climate disasters on community health resilience, improving cooperation (Iftikhar et al., 2026).

It is also reported that climate change not only affects mental health through direct exposure but also through vicarious, pathways. It is already known that direct exposure to floods, heatwaves, and storms can cause trauma, displacement, and loss (Berry et al., 2010; Doherty & Clayton, 2011). Yet people who have never experienced disaster firsthand may still be affected by its negative consequences through media coverage, social networks, and by hearing about others' suffering (Bourque & Willox, 2014). The term vicarious exposure is linked to worry, grief, and helplessness, which are collectively described as eco-anxiety or climate anxiety (Clayton, 2022; Pihkala, 2020; Ojala et al., 2021). Recent studies on the concept of eco-anxiety suggest that this phenomenon does not exist in isolation but is linked to a range of other emotional and motivational experiences, including Climate hope. According to Snyder's (2002) hope theory, when people believe that they can act and find a way to reach their goals, hope can help protect people from feeling anxious and reduce the emotional and mental harm created by climate change. According to Ojala (2013), young people who cope with the climate crisis through meaning-based coping strategies and have hope in the crisis, find themselves in better climatic well-being and greater environmental involvement than those who avoid or deny. In terms of psychological factors that promote climate hope, recent researches provide support for perceived self-efficacy and trust in collective action (Li & Monroe, 2019), as well as support for climate mobilization (Marlon et al., 2019).

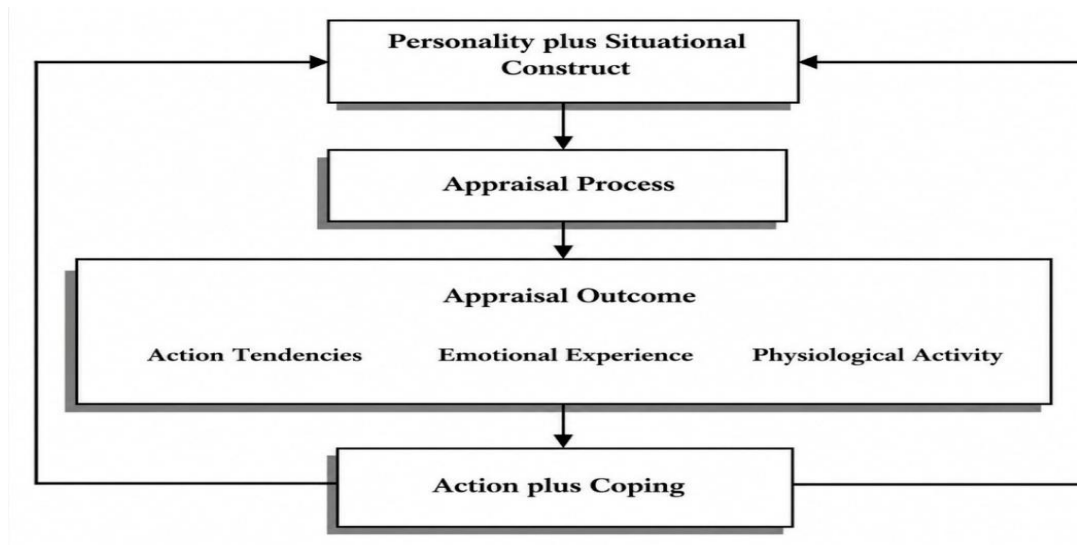
However, when the government is perceived as unresponsive or unfaithful, youth perceive greater emotional distress and less hope (Hickman et al., 2021), indicating that political trust and perceived agency influence emotional responses. Political Trust and perceived political agency have been found as negatively associated with eco-anxiety, and these findings are consistent with contemporary literature emphasizing the psychological burden carried by youth who perceive systemic inaction in the face of environmental crises (Hickman et al., 2021; OECD, 2026). The limited practical role of the youth in addressing climate change is a major source of climate anxiety and is associated with perceptions of inadequate adult and governmental action, feelings of betrayal, and moral injury (Deji-Olorunjoba et al., 2026; Oladunmoye et al., 2026). As youth perceive they have less agency, they become less capable of contributing to their communities, which further intensifies the feelings of economic deprivation and loss. These days, fluctuations in environmental policies, the slow adoption of climate strategies, and people's reduced reliance on promises from the government concerning climate agencies have stirred greater concern and disappointment among citizens (Hickman et al., 2021). With these developments, important questions arise about the reactions of people in risky and environmentally unstable areas when environmental policies aren't addressed or communicated. According to research, how responsive people believe the government is, as well as their sense of duty and environmental awareness, have a major effect on behavioral manifestations of coping, such as activism (Boulianne & Ohme, 2021; Haugestad et al., 2021). When people see a weakening environment in democratic societies, the reaction is expressed through protests, online petitions, and advocacy around them.

Trust, however, is not consistent, and some researches demonstrates the lack of confidence in authorities was associated with more active coping strategies, indicating that institutional distrust can lead individuals to employ their own agency (Parreira & Mouro, 2023). While trust in scientists/institutions may be a predictor of action readiness, it does not always influence the link between disaster exposure and distress (Betsch et al., 2025; Monge-Rodriguez et al., 2026). Research reveals a direct relationship between climate anxiety and pro-environmental behaviors, but also a negative relationship through general self-efficacy, highlighting the complex relationship between anxiety and agency, and its effect on climate action (De Smidt, 2024). Ironically, climate impacts may also increase perceived agency. According to a study, the youth of United States with direct exposure score higher on agency scores, indicating that disaster exposure may facilitate psychological adaptation and agency (Abdallah et al., 2026; Vercammen et al., 2023b). Belief in the group's capacity to realize change, or collective efficacy, is also essential, especially with Generation Z, which helps to shift their distress into enduring activism by peer support and the formation of social identity (Dhanda, 2025). Additionally, slow onset climate stress is linked to psychological harm, especially among those who feel powerless to do anything about it, i.e. have a lower sense of agency (Anjum & Fraser, 2021).

Theoretical Framework

Cognitive Appraisal Theory of Emotion

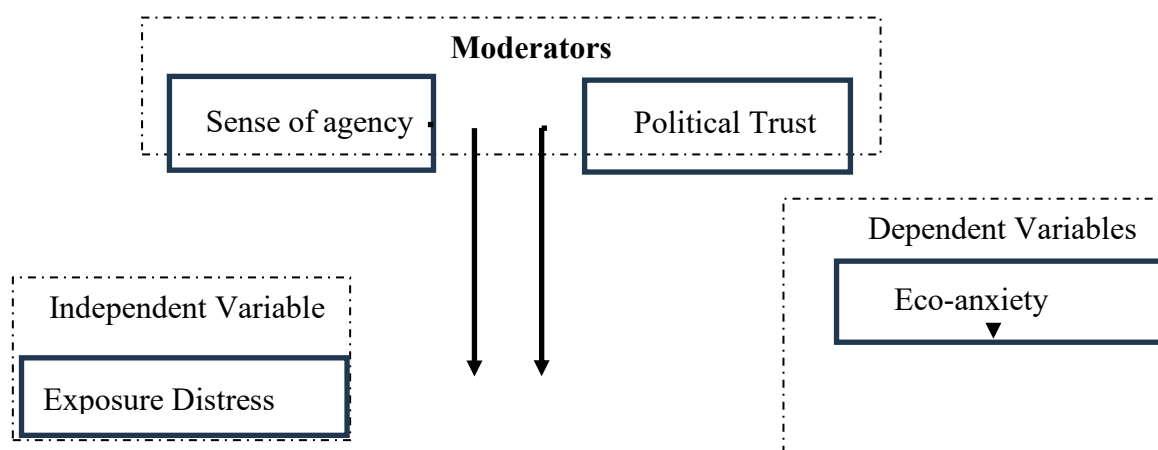
This hypothesized model is based on the Cognitive Appraisal Theory of Emotion (Lazarus, 1991, 1999). According to this model, emotions are not objectively assessed, but a product of person-environment interactions. The information from the environment passes through two appraisals: a primary appraisal of threat, and a secondary appraisal of coping efficacy. Lazarus (1991) proposes that people actively assign meaning to stimuli rather than being passive recipients, and depending on one's appraisal, the same event can generate different emotional reactions (Lazarus, 1991). Thus, within this framework, the variables map as follows: exposure acts as a stressor, and its consequent distress as a function of primary appraisal. The moderators act as evaluations of internal and external coping resources, hence secondary appraisal processes. Higher political trust and a positive sense of agency should support a proactive secondary appraisal, buffering negative affective outcomes. Lastly, eco-anxiety and climate hope are framed as the affective outcomes of these appraisal processes.

Figure I: Cognitive Appraisal Theory of Emotion

Note: Larner's Model of Lazarus' (1991) Cognitive Appraisal Theory of Emotion (Larner, 2008, p. 129)

Rationale

Existing research confirms the prevalence of climate-related distress among the youth (Akhtar, 2025; Meo et al., 2025) and its impact on mental health (Soomro et al., 2024). Exposure, however, does not solely explain emotional outcomes, and the variability may reflect perception of coping and plays an important role theoretically: sense of agency (Tapal et al., 2017) and political trust (Citrin & Stoker, 2018). Both may shape how exposure drives emotional outcomes, with trust predicting policy support and willingness to climate action (Yang et al., 2026) and perceived inadequacy being the strongest correlates of anxiety (Steele, 2025; Waseem, 2025). The literature has some unaddressed avenues. One, the impact of indirect disaster exposure on climate-based psychological variables remains severely underexplored in our indigenous context (Waseem, 2025; Yousuf et al., 2023), rather focusing on direct mental health impacts. For young adults, climate-related information is mediated through social media and news for some and a personal reality for others and should be explored accordingly. Most indigenous research also frames climate-based psychological variables as predictors (Abbas et al., 2025; Akhtar et al., 2025; Meo et al., 2025) and rarely as outcomes (Waseem, 2025). Additionally, the predicting role of sense of agency and political trust towards climate anxiety has been studied (Waseem, 2025), but not in a moderating capacity with exposure. Mixed support has been found for political trust as a relevant variable (Kulin & Seva, 2020; Lim & Moon, 2020), and the indigenous gap is geographically important as trust functions differently in politically unpredictable contexts like the global south (Asghar et al., 2026). As such, the present study aims to examine the relationship between indirect exposure to climate disasters and two affective outcomes, namely eco-anxiety and climate change hope, and test whether sense of agency and political trust play a moderating role.

Figure II: Conceptual Framework of the study

Objectives

1. To investigate the role of disaster exposure distress on influencing eco-anxiety and climate change hope among youth in Pakistan.
2. To investigate the moderating roles of political trust and perceived agency in shaping eco-anxiety and climate change hope among disaster-exposed Pakistani youth.

Hypotheses

- H1: Exposure distress to climate disasters will positively predict eco-anxiety.
- H2: Exposure distress to climate disasters will negatively predict climate change hope.
- H3: Sense of agency will moderate the relationship between climate disaster exposure distress and eco-anxiety & climate change hope.
- H4: Political trust will moderate the relationship between climate-disaster exposure distress and eco-anxiety & climate change hope.

III. METHOD

Participants

This study uses a quantitative, cross-sectional, correlational design to examine how exposure to climate-related disasters predicts eco-anxiety among Pakistani youth aged 18–29, with political trust and perceived agency tested as moderators. Using convenient sampling technique across educational institutes and social media in Pakistan, young adults across Rawalpindi, Islamabad, Lahore and Peshawar were recruited. Inclusion criteria specified an age-range of 18-29, based on the government's definition of youth as 15-29 years of age (Punjab Youth Policy, 2012), and the lower end raised to 18 to bypass the need for guardian permission. Additionally, owing to language constraints of the instruments used, criteria specified participants with adequate English language ability.

Measures

[I] Impact of Event Scale-6 (IES-6): The Impact of Event Scale-6 was used as a measure of exposure distress, developed by Thoresen et al. (2010). It is a brief measure of 6 items, scored on a 5-point Likert scale, from 0 (Not at all) to 4 (Extremely). The measure is adaptable to the event under scrutiny, and was specified to the experienced/witnessed climate disasters in the present study. The scale reports a good internal consistency of .80.

[II] Trust in Government Organizations Scale (CTGO): Developed by Grimmelikhuijsen and Knies (2017), the Citizen Trust in Government Organizations Scale was used as a measure of political/institutional trust. It has 9 items, following an adaptable prefix 'When it concerns X policy; the [government of ABC] is...', and thus adapted to 'climate policy of the government of Pakistan'. It is scored on a 5-point Likert scale, ranging from 1 (Strongly Disagree) to 5 (Strongly Agree), and demonstrates a good Cronbach alpha of .83-.87.

[III] Sense of Agency Scale: The Sense of Agency scale by Tapal et al. (2017) was used to measure participant's perception of positive and negative agency, the two dimensions scored separately. It is a 13-item measure, scored on a 7-point Likert scale, ranging from 1 (Strongly Disagree) to 7 (Strongly Agree). Both dimensions demonstrate acceptable Cronbach alphas of .76 and .87.

[IV] Hogg Eco-Anxiety Scale (HEAS-13). Hogg's Eco-Anxiety scale (Hogg et al., 2021) is a measure of anxiety experiences relating to climate crises, over a retroactive period of 2 weeks. It consists of 13 items, scored on a 4-point Likert scale ranging from 0 (Not at all) to 3 (Nearly every day). It also demonstrates excellent Cronbach alphas of .86-.92 across its dimensions.

[V] Climate Change Hope Scale (CCHS): Climate change hope scale, developed by Li & Monroe (2018), was used as a measure of the participants' future orientation i.e. degree of hope about climate change. It contains 11 items, scored on a 7-point Likert scale ranging from -3 (Strongly Disagree) to +3 (Strongly Agree), and an 'X' option for those who do not endorse the item (I do not think climate is changing). The last 3 items are reverse-coded, scores are added and averaged across the non-X items. It also reports acceptable to excellent Cronbach alphas ranging from 0.75 to 0.94.

Procedure

Participants were approached through online social media channels and in-person in higher education institutes. Three of the five scales were open-access, and authors permissions for scale-use of the other two were sought. Throughout, informed consent was taken from the participants, and participation was voluntary. Names were

collected for the purposes of data organization, and the final data was anonymized and aggregated results were developed. Data was kept secured in protected channels and only accessible to the team. Analysis was conducted using SPSS v25, with reliability checks and descriptive statistics. Correlation and regressions were used to test the predictive effects of exposure distress on eco-anxiety and climate change hope, as well as for moderation analyses to test the roles of political trust and perceived agency.

IV.RESULTS

Prior to the primary analyses, the data was screened for missing values, outliers, and normality. No data was missing, and continuous variables were checked for normality via skewness and kurtosis. All scores fell within acceptable thresholds of ± 2 (George & Mallory, 2010), indicating the data was normally distributed and conducive to parametric testing.

Table I: Demographic Profile of Participants

Variables	<i>f</i>	%
Gender		
Male	43	16.9
Female	212	83.1
Living Area		
Urban	166	65.1
Suburbanassasas	39	15.3
Rural	50	19.6
Education		
10-14 years	31	12.2
16 years / BS	175	68.6
18 year / MS/MPhil	49	19.2
Occupation		
Student	161	63.1
Employed	72	28.3
Unemployed	22	8.7
Living Status		
Day-scholars/ Living in hometown	198	77.6
Hostelites / Living away from hometown	57	22.4
Type of Exposure		
Direct Exposure	41	16.1
Indirect Exposure	141	55.3
Both	73	28.6

Note. N = 255; Mean Age = 22.99 (S.D. = 3.3); Mean number of events experienced = 2.95 (Range: 1-8)

The final sample consisted of 255 young adults, aged 22.99 years old on average (S.D. = 3.3). The sample was female-dominant (83.1%), with the majority being an urban (65.1%) student (63.1%) population. The most common type of exposure was indirect (55.3%), followed by dual exposure to direct experiences and indirect witnessing (28.6 %).

Table II: Psychometric Properties for Scales and Subscales

Variables	No. of items	Mean	Standard Deviation	Cronbach's α
Impact of Event (IES-6)	6	10.05	4.69	.75
Political Trust (CTGO)	9	20.34	8.12	.93
Sense of Agency	13			.74
Positive Agency (SoPA)	7	29.48	7.33	.73
Negative Agency (SoNA)	6	19.69	6.87	.78
Eco-Anxiety (HEAS-13)	13	16.44	8.82	.90
Climate Change Hope (CCHS)	11	.72	.92	.81

Note. N = 255. CTGO = Citizen's Trust in Government Organizations

All scales employed in the study demonstrated acceptable to excellent internal consistency reliability. Cronbach's alpha coefficients ranged from .73 for positive agency subscale, to as high as .93 for CTGO, indicating that all measures were highly reliable and appropriate for hypothesis testing.

Table III: Pearson Correlations between the Study Variables

Measures	1	2	3	4	5	6
1. Impact of Event (IES-6)	-	-.001	.04	.18**	.43***	.09
2. Political Trust (CTGO)		-	.03	.19**	.02	-.01
3. Positive Agency			-	.12*	-.02	.33***
4. Negative Agency				-	.43***	-.12
5. Eco-Anxiety (HEAS-13)					-	.02
6. Climate Change Hope (CCHS)						-

Note. CTGO = Citizen's Trust in Government Organizations

*** $p < .001$, ** $p < .01$, * $p < .05$

A Pearson product correlation analysis revealed mixed results. Impact of event had a significant positive relationship with negative agency ($r = .18, p < .01$), and eco-anxiety ($r = .43, p < .001$). Negative agency was also positively correlated with political trust ($r = .19, p < .01$), and eco anxiety ($r = .43, p < .001$). Lastly, positive agency was associated with climate change hope ($r = .33, p < .001$). This indicates that participants reporting higher distress also report higher negative agency, and both associate with higher eco-anxiety. However, higher positive agency is associated with increased hope related to climate change.

Table IV: Linear Regression Analysis for Predicting Eco-Anxiety

Predictors	B	SE	β	t	p	95 % CI
Constant	8.35	1.18		7.04	.000	[6.01, 10.68]
Impact of Event (IES-6)	.80	.11	.43	7.53	.000	[.59, 1.01]

Note. $R^2 = .18$, Adjusted $R^2 = .18$, $F(1, 253) = 56.66, p < .001$. Dependent Variable: Eco-Anxiety

Simple linear regression was run to evaluate impact of event as a predictor of eco-anxiety. The results support hypothesis one, with the model significant at $F(1, 253) = 56.66, p < .001$, and explaining 18% of the variance in eco-anxiety. Impact of event emerged a significant predictor ($\beta = .43, p < .001$), meaning that as distress of disasters went up, eco-anxiety raised significantly as predicted by hypothesis one.

Table V: Linear Regression Analysis for Predicting Climate Change Hope (N = 255)

Predictors	B	SE	β	t	p	95 % CI
Constant	.56	.14		4.13	.000	[.29, .83]
Impact of Event (IES-6)	.07	.01	.08	1.29	.20	[-.008, .04]

Note. $R^2 = .007$, Adjusted $R^2 = .003$, $F(1, 253) = 1.68, p > .05$. Dependent Variable: Climate Change Hope

Another model was run to investigate impact of event as a predictor of climate change hope. The model emerged non-significant at $F(1, 253) = 1.68, p > .05$, and explained a mere .7% of the variance in climate change hope. Impact of event did not emerge as a significant predictor ($\beta = .08, p > .05$), contrary to hypothesis two.

Moderating Role of Political Trust and Sense of Agency

Moderation was tested using hierarchical multiple regression, run separately for each outcome, using standardized predictors. In Step 1, IES, CTGO, SoPA, and SoNA were entered. In Step 2, the three product terms (IES $\times$ CTGO, IES $\times$ SoPA, IES $\times$ SoNA) were added. The full regression output was not tabulated in the interest of brevity, as all interaction terms were non-significant and reported in text.

Eco-Anxiety

Step 1 accounted for 32% of the variance in EAS, $F(4, 250) = 29.37, p < .001$. Adding the interaction terms did not significantly improve the model, $\Delta R^2 = .001, \Delta F(3, 247) = .07, p > .05$. None of the interactions were significant: IES $\times$ CTGO ($\beta = -.01, p > .05$), IES $\times$ SoPA ($\beta = -.008, p > .05$), and IES $\times$ SoNA ($\beta = -.02, p > .05$). Thus, the results did not provide support for hypothesis three.

Climate Change Hope

Step 1 accounted for 15% of the variance in CCHS, $F(4, 250) = 10.68, p < .001$. The interaction terms again did not significantly improve the model, $\Delta R^2 = .000, \Delta F(3, 247) = .03, p > .05$. None of the interactions were significant: IES $\times$ CTGO ($\beta = .002, p > .05$), IES $\times$ SoPA ($\beta = -.01, p > .05$), and IES $\times$ SoNA ($\beta = -.01, p > .05$). Thus, the results did not provide support for hypothesis four.

V. DISCUSSION

The present study examines how climate disaster exposure, direct or vicarious, is related to eco-anxiety and climate change hope, and the moderating roles of sense of agency and political trust on this relationship. The results support hypothesis one, that climate disaster exposure predicts eco-anxiety. Findings align with existing literature, whereby exposure to disasters, or media-based information was linked to an increase in climate anxiety (Maran and Begotti, 2021; Ogunbode et al., 2022). This aligns closely with the appraisal processes of Lazarus's cognitive theory of emotion, by which a person actively constructs perception of a benign or threatening environment based on cognitive appraisal of a trigger (Lazarus, 1999). Given Pakistan's vulnerability and recurrent history of disasters, the events are plausibly appraised as a high-stakes, personally relevant threat, that cannot be dismissed as abstract and distant as they may do in developed western countries (Grossman et al., 2026). Literature supports this contrast (Shinan-Altman & Hamama-Raz, 2025; Whitmarsh et al., 2022), in the UK and Israel, where anxiety was relatively low despite higher awareness and exposure, which was predicted by higher use of problem-focused coping. The findings did not provide adequate support for hypothesis two, i.e., exposure did not translate directly into hope.

The null result sits with mixed literature; where some (Sangervo et al., 2022; Sommerschuh & Schnegg, 2025) suggest that exposure associates with and supports hope, and that climate anxiety and climate change hope are both positively correlated with each other and climate action. Other works align closely with the null finding, such as Umali (2023) suggesting that disaster-related news does not significantly impact optimism or hopelessness, or Bordes et al. (2024) finding that hope scores between directly and indirectly hurricane-exposed people were comparable. This suggests that exposure alone is a weak predictor of hope in light of other, perhaps cultural factors. Two threads may explain this discrepancy. One, within Lazarus's (1991) model, hope may be closer to a secondary appraisal evaluation of coping rather than an affective outcome of the primary appraisal. Lazarus himself treats hope as dual-natured, both as an emotional outcome and a coping resource with the function to sustain effort and prevent despair, feeding back into itself (Lazarus, 1999). Secondly, in Pakistan's predominantly Muslim sample, hope is often attributed to *tawakkul* or trust in God (Gondal et al., 2023). Therefore, hope anchored in a consistent faith-based concept rather than a dynamic environmental one, may lead it to remain stable despite fluctuating distress.

Sense of agency did not moderate the relationships between disaster exposure and affective outcomes, rejecting hypothesis three. First, structural constraints may nullify a positive sense of agency. Despite high climate vulnerability, Pakistan has limited infrastructural capacity to cope with recurring disasters, gaps in disaster-responsive psychosocial support (Riaz et al., 2023), and low climate literacy (UNICEF, 2023). Social cognitive theory also distinguishes between personal and collective agency, wherein the power lies with broader social institutions (Bandura, 2001). This contrast is supported by cross-cultural coping research (Kuo, 2012), arguing that Western models center around individuals, while collectivistic cultures such as Pakistan center around families and groups. Therefore, in such a system prioritizing group harmony and structural threats, youth's individual agency may be psychologically present but functionally irrelevant. Secondly, the indigenous role of religion may be at hand here as well. A negative agency, with events or decisions out of one's control, may not be perceived as helplessness rather a matter attributed to God. This fits research on *tawakkul*, linked with higher acceptance (Gondal et al., 2021), and lower depression and anxiety (Gondal et al., 2023). Therefore, a lower personal control may not carry its usual negative connotations, contrary to international understandings.

Hypothesis four was not supported as its moderating effect was also non-significant. One plausible explanation may be attributed to the low political literacy, knowledge and awareness among the Pakistani Youth (Asma & Rauf, 2024), and a broader distrust in institutions (Ipsos Pakistan, 2025). People are often unaware of the policies made and implemented by government agencies, a gap in the government-citizen communication. Disaster management shows this. Pakistan's National Disaster Management Act 2010 enforces a three-tier system; NDMA federally, PDMA provincially, district authorities below them, with consistent response support from Rescue 1122 (NDMA, 2026). Yet research identifies persistent weaknesses in public awareness (Jan et al., 2025). Most citizens likely only know these organizations by name, not mandates, operations and policies, which may further weaken institutional trust (Mubeen, 2025). This also aligns with other climate-vulnerable countries, where the exposure-trust relationship does not follow those of developed ones. Political trust is inversely linked with pro-climate concerns/attitudes in developing countries (da Silva et al., 2024; Verner, 2023), whereas in developed countries, trust aligns positively with concern and translates to policy support (Kulin & Seva, 2020). Therefore, if trust operates as a collective stable backdrop compared to individual perception, it explains the present null results.

Limitations and Suggestions

The research was based on cross-sectional, correlational survey, which limits understanding of causal relationships as well as introduces social desirability bias into the data. Future research should employ longitudinal and mixed-method approaches for better capturing the dynamic nature of the phenomena and overcoming bias. The data was skewed towards a female, educated, and indirectly exposed sample, and a more diverse one should help improve the study's generalizability. Validated scales were only available in English, thus excluded directly-affected, vulnerable populations. As such, the study could not separate the effects of different exposure types. Future research should develop culturally validated tools, to include those most affected by climate disasters but remain underrepresented in research. Future studies should also compare the specific psychological effects of direct versus indirect exposure. Furthermore, the role of culturally specific variables such as religious coping, political and climate literacy, and the gap between agency and action should be explored.

Implications

First, the study extends the literature on climate exposure by jointly testing emotional outcome pathways alongside internal and external coping moderators within a single design, thus addressing the indigenous gap in disaster-context research. The null moderations also suggest a consideration boundary on Lazarus's (1999) stress and emotion model: that secondary appraisals of coping mechanisms may operate differently in collectivistic cultures marked by chronic vulnerability and political uncertainty, thus highlighting the need for local cultural recalibration. Practically, the findings have direct implications for climate awareness and media practice, suggesting the need for trauma-sensitive disaster reporting. Second, since individual agency appears irrelevant, a suggested direction worth exploring is shifting the focus of resilience interventions to building community-level agency rather than individual skills. Second, the possible role of religion, through *tawakkul* and religious coping should be anchored into existing systems for improved cultural integration. Third, given the influence of low political literacy, media or school-based campaigns to increase awareness about institutional policies and mechanisms might prove prudent.

VI. CONCLUSION

This study aimed to explore whether exposure to climate disasters influences young people's eco-anxiety and their hope regarding climate change. It further examined the moderating role of sense of agency and political trust to help reduce or enhance these feelings. Findings showed that experiencing or witnessing climate disasters was linked to higher eco-anxiety among youth, confirming that climate-related distress is a measurable psychological reaction to environmental threats. However, exposure alone did not seem to create a sense of hope, neither sense of agency nor political trust acted as effective buffers in the way we expected. This suggests that the connection between exposures, distress, and its appraisal mechanisms is more complex, particularly in light of the cultural factors.

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VII. REFERENCES

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