Eco-Anxiety Without Borders: A Cross-National Study on Climate Perceptions and Beliefs About Government Climate Action

Abstract

Eco-anxiety has emerged as a salient emotional response to the global climate crisis; however, empirical data on its prevalence and correlates across diverse cultural contexts remain limited. This cross-national study examined eco-anxiety and its associations with age, perceived knowledge, climate risk perception, and beliefs about governmental climate action in a sample of 2,206 participants from six countries: India, Italy, the Philippines, Türkiye, Trinidad and Tobago and Hungary. Participants completed standardized self-report instruments, including the Hogg Eco-Anxiety Scale, the Climate Risk Perception Scale, and a government action belief scale. Descriptive analyses revealed statistically significant cross-national differences in eco-anxiety, perceived knowledge, risk perception, and beliefs about government action. Italian participants reported the highest levels of eco-anxiety, while Hungarian participants exhibited the lowest. Correlation analyses demonstrated that eco-anxiety was positively associated with climate risk perception and perceived knowledge, and negatively associated with age and beliefs about government action. The findings highlight the sociopolitical and cognitive foundations of climate-related emotional responses and point to the need for culturally informed public policies and psychological support systems to address the mental health dimensions of the climate crisis.

Keywords: Eco-anxiety, eco-distress, climate change perception, beliefs about government action, cross-national study, environmental psychology

Introduction

The climate crisis is not only an environmental issue but also a multidimensional threat to human health and psychological well-being. While the physical consequences of the climate crisis—such as rising temperatures, increasing frequency of natural disasters, and biodiversity loss—are well documented, its emotional and psychological impacts have only recently gained scientific attention (Clayton, 2020; Aras & Demirci, 2020). Among these impacts, eco-anxiety has emerged as a salient emotional response to the perceived existential threat posed by climate crisis. The American Psychological Association defines eco-anxiety as "a chronic fear of environmental doom" (Clayton et al., 2017).

Eco-anxiety is increasingly understood not merely as a pathological state but as a rational and, at times, adaptive emotional response to environmental degradation (Pihkala, 2020; Stanley et

al., 2021). While some individuals may channel their anxiety into climate activism or policy engagement, others may experience emotional overload, hopelessness, or even disengagement from environmental issues (Verplanken & Roy, 2013; Stanley et al., 2021). This dual nature of eco-anxiety—both motivating and paralyzing—highlights the need to examine the psychological underpinnings of climate-related emotions in greater depth. Recent research also shows that eco-anxiety coexists with other climate-related emotions such as eco-anger and eco-depression, which exert distinct effects on climate action and wellbeing (Stanley et al., 2023).

It is important to distinguish eco-anxiety from other emerging constructs such as solastalgia or eco-grief. While eco-anxiety broadly captures feelings of anxiety, worry, and rumination about current and anticipated climate threats (Hogg et al., 2021), solastalgia refers to distress linked to experienced environmental changes in one's home environment (Albrecht et al., 2007). Similarly, eco-grief is more specifically associated with the emotional pain of ecological loss. Eco-anxiety can also be understood as part of the broader construct of eco-distress, which encompasses a range of emotional reactions, including anger, sadness, and grief, in response to environmental threats (Pihkala, 2020). We focused on eco-anxiety because it provides a more generalizable and empirically validated framework suitable for cross-national comparisons. Recent large-scale investigations, such as Hickman et al. (2021) and Ogunbode et al. (2022), highlight the prevalence and global significance of these emotional responses. In addition, collaborative efforts such as the Changing Worlds study underscore the importance of capturing cross-cultural differences and ensuring globally comparable yet contextually sensitive approaches (Vercammen et al., 2023). Nevertheless, such studies remain relatively rare, and significant gaps persist in understanding how eco-anxiety is shaped by diverse socio-political and cultural contexts.

The impacts of climate crisis are not confined to environmental domains; they also exacerbate broader societal crises such as socioeconomic inequalities, food insecurity, and forced migration. These factors are well-established determinants of mental health and can amplify the psychological burden of climate-related stress (IPCC, 2022; Pihkala, 2020). Therefore, the psychological effects of climate change should be understood within this multi-layered context.

Importantly, psychological responses to the climate crisis are shaped not only by individual-level factors but also by broader social, political, and cultural contexts (Clayton & Karazsia, 2020). Institutional trust, media narratives, and national political discourses significantly influence how individuals perceive and respond to climate threats. For instance, public perceptions of governmental climate action—or the lack thereof—have been shown to play a

critical role in shaping emotional responses (Hickman et al., 2021). Ojala (2012) found that as adolescents gain more knowledge about the complexity of the climate crisis, their feelings of anxiety and helplessness tend to increase. Similarly, Coffey et al. (2021) reported that women, younger people, and individuals with high environmental awareness are more likely to experience heightened eco-anxiety.

Despite its growing relevance, the existing empirical literature remains largely Western-centric, limited to single-country studies, and focused mostly on youth populations or environmental activists (Clayton, 2020; Verplanken & Roy, 2013; Coffey et al., 2021). As a result, the ways in which eco-anxiety is shaped by institutional trust, cultural values, and political environments across different national contexts remain underexplored. This limitation hinders a holistic understanding of eco-anxiety as not only an individual psychological response but also a socially constructed and politically embedded phenomenon (Clayton & Karazsia, 2020; Leiserowitz, 2006).

This study aims to address this gap by adopting a cross-national, comparative approach to explore the cognitive, emotional, and political dimensions of eco-anxiety. To conceptualize eco-anxiety within and across national contexts, the present study is grounded in Lazarus and Folkman's (1984) Transactional Model of Stress and Coping. This framework suggests that emotional distress arises from individuals' cognitive appraisals of external threats and their perceived capacity to cope. In the context of climate change, individuals who perceive environmental risks as severe and feel a lack of agency to mitigate these threats are more likely to experience higher levels of eco-anxiety. In addition, the study incorporates insights from Hofstede's (1980) and Schwartz's (1992) cultural values frameworks, along with Leiserowitz's (2006) model of climate risk perception, to examine how knowledge, institutional trust, and risk evaluations interplay with eco-anxiety.

Based on this framework, the study investigates the associations between eco-anxiety, perceived knowledge of climate change, climate risk perception, and beliefs about governmental climate action in six countries: India, Italy, the Philippines, Türkiye, Trinidad and Tobago, and Hungary. In addition, unlike previous studies that have predominantly examined adolescents and youth populations, this study specifically focuses on adults to understand how eco-anxiety manifests across diverse cultural and political contexts.

The study addresses the following research questions:

- What are the levels of eco-anxiety among individuals in India, Italy, the Philippines, Türkiye, Trinidad and Tobago, and Hungary?
- What are the participants' perceived knowledge regarding the causes and consequences of climate change, their beliefs about government action on climate change, and their perceptions of climate change-related risks?
- What is the relationship between age, perceived knowledge, beliefs about government action, risk perception, and eco-anxiety?
- Are there significant cross-national differences in eco-anxiety, perceived knowledge, beliefs about government action, and risk perception among participants?

These six countries were selected to capture diversity in cultural, economic, and political contexts. They differ significantly in governance models, climate vulnerability, socio-economic development, and public discourse on environmental issues. For instance, the Philippines and Trinidad and Tobago are highly exposed to climate-related hazards such as typhoons and sea-level rise (Holden & Marshall, 2018; Jeppesen et al., 2015), whereas Hungary faces relatively lower immediate risks but exhibits distinct political narratives regarding climate policy (Clean Energy Wire, 2024)**.** Türkiye and Italy, both situated in the Mediterranean basin, have recently experienced severe climate-related impacts, including heatwaves, droughts, and wildfires (Türkeş, 2019; Bussotti et al., 2023), making public perception of climate risks particularly salient in these regions (Xekalakis et al., 2023). In contrast, India is among the most climate-vulnerable countries due to its extensive exposure to highly sensitive regions such as coastal zones, mountains, and drylands, where vulnerability is further amplified by underdevelopment and a large population. In addition to these conceptual considerations, the final selection of countries was also influenced by practical factors. Several research teams from these countries expressed willingness to participate and provided institutional support for data collection, while attempts to include other countries were not successful due to limited engagement or insufficient sample sizes. This diversity enables the study to examine eco-anxiety as a context-sensitive phenomenon rather than a culturally homogeneous construct. By addressing these questions, the study seeks to provide a comprehensive understanding of eco-anxiety across diverse cultural and political contexts.

Method

Research Model

This study employed a correlational survey design to examine the associations between eco-anxiety and a range of psychological and contextual variables across six countries: India, Italy, the Philippines, Türkiye, Trinidad and Tobago, and Hungary. Guided by the Transactional Model of Stress and Coping (Lazarus & Folkman, 1984), eco-anxiety was conceptualized as a psychological response to perceived environmental threats and the perceived capacity to act. Key variables included perceived knowledge, risk perception, and beliefs about government action, with age, education, and country considered as contextual factors. The cross-national design enabled comparative analysis across diverse cultural and political settings, offering insight into how eco-anxiety varies across populations and socio-ecological systems.

Participants

A total of 2,206 participants were recruited using a non-probabilistic convenience sampling method through online platforms (e.g., Facebook, Instagram, WhatsApp, Twitter). The sample included participants from India (n=389), Italy (n=313), the Philippines (n=657), Türkiye (n=420), Trinidad and Tobago (n=141), and Hungary (n=286). Eligibility criteria included being at least 18 years old and providing informed consent. This minimum age was chosen to ensure participants could provide informed consent and because the study aimed to examine eco-anxiety among adults rather than minors. The mean age was 31.23 years (SD = 14.34), ranging from 18 to 83 years. Gender distribution was 66.7% female, 32.5% male, and 0.8% identifying as other. The distribution of the number of participants (N=2206) according to country is shown in Table 1.

Table 1. Distribution of the Participants According to Countries

	Frequency	Percentage
India	389	17.6
Italy	313	14.2
Philippines	657	29.8
Türkiye	420	19.0
Trinidad Tobago	141	6.4
Hungary	286	13.0

Data Collection Tools

For data collection, a Socio-Demographic Form, a Climate Change Perception Questionnaire, and the Hogg Eco-Anxiety Scale are used.

Socio-demographic Form: It consists of 5 questions (age, gender, marital status, education level, and country).

Climate Change Perception Questionnaire: The questionnaire consists of 21 items, 5 points Likert-type. The items are focused on the participants' climate change risk perceptions and their perceptions towards the government's attitudes toward climate change. For each subscale, the higher scores referred to a higher degree of the related subject.

There were two questions about the "**perceived knowledge of the causes and consequences of climate change**". The questions were conducted by the researchers after reviewing the related literature. This part was 4-Likert type ranging from 1-I have no knowledge to 4-I have a lot of knowledge. The scores obtained vary between 2 to 8.

There were ten questions about "**beliefs about government action**" towards climate change. This part was 5-likert (1-I strongly disagree, 5-I strongly agree). This section contains questions from the survey used in a study by Hickman et al. (2021). Scores varied between ten and fifty. The 8th, 9th, and 10th items ("I believe that my government is (8) lying about the effectiveness of the actions they're taking, (9) failing young people across the world, and (10) betraying me and/or future generations) from the "Beliefs about Government Action" subscale were reversed. High scores refer to a positive attitude toward government action.

Finally, the "**Climate change risk perceptions**" subscale developed by Leiserowitz (2006) subscale consisted of nine items, 4-likert type ranging from 1-not at all to 4-extremely. Possible scores vary between 9-36. This scale provides a comprehensive assessment of how concerned participants are about climate change and what consequences they think it will lead to in the future. The scale consists of items such as "How concerned are you about climate change?", "Increased rates of serious disease worldwide." and "My standard of living will decrease." (Leiserowitz, 2006).

The Hogg Eco-Anxiety Scale: The scale is developed by Hogg et. al (2021). It is 4 Likert-type, as "1- Never", "2- Sometimes", "3- Often", "4- Almost Always". It has 13 items and 4 dimensions. The scale includes emotional symptoms (items 1, 2, 3, 4), and behavioral symptoms (items 8, 9). items 10), anxiety about personal impact (items 11, 12, 13), and rumination (items 5, 6, 7). There are no reverse items in the scale. The increase in the scale total

score and the average score calculated for each dimension indicates an increase in anxiety levels. In the current study, the internal consistency of the scale was found to be high, with a Cronbach's alpha coefficient of .89 for the overall scale. This value demonstrates strong reliability across diverse linguistic and cultural contexts.

Translation, Adaptation, and Ethical Procedure

In line with the multilingual and multinational nature of the study, the data collection instruments included one standardized psychological tool—the *Hogg Eco-Anxiety Scale* (Hogg et al., 2021) —and several additional instruments that were either developed by the researchers or adapted from prior literature (e.g., Hickman et al., 2021; Leiserowitz, 2006). The newly constructed tools were initially prepared in English and were linguistically and culturally adapted, when necessary, to ensure conceptual clarity across participating countries. In countries where English was the primary language of data collection, the instruments were administered without modification. In other linguistic contexts, the surveys and the eco-anxiety scale were translated using the forward–backward translation method and reviewed by bilingual experts to ensure both semantic accuracy and cultural appropriateness. When validated versions of specific instruments were available—for example, the Turkish adaptation of the Hogg Eco-Anxiety Scale by Uzun et al. (2022) —they were used directly. Otherwise, adaptations were conducted in accordance with the International Test Commission (ITC) guidelines. All adapted instruments underwent pretesting and pilot implementation prior to full-scale data collection. Data were collected in English, Turkish, Italian, and Hungarian, depending on the linguistic context of each participating country. Each national research team took the necessary measures to ensure that the data collection instruments were accessible, comprehensible, and culturally aligned with participants' experiences.

Procedure

The data collection process was carried out independently by each participating country. Research teams administered the survey either in English or in the participants' native language, depending on the linguistic context. Data collection took place between July 2, 2022, and July 6, 2023. Data collection was conducted through various non-probability methods, including the use of social media platforms (e.g., Facebook, Instagram, Twitter, LinkedIn, WhatsApp), email invitations, and announcements disseminated via academic, professional, and civil society networks. In some cases, university students participated as part of their coursework and received course credit in return for their voluntary contribution. Participants were also

encouraged to share the survey link within their personal and professional circles. Although data collection procedures varied slightly across countries, all processes adhered to ethical research standards and ensured voluntary and informed participation. After the completion of data collection at the country level, all datasets were compiled into a unified database for analysis. Although the Netherlands and Jamaica were initially included in the data collection plan, their data were excluded from the final analysis due to an insufficient number of participants. The final dataset comprised responses from six countries: India, Italy, the Philippines, Türkiye, Trinidad and Tobago, and Hungary.

Statistical Analysis

As the Skewness and Kurtosis values are considered acceptable ±1.5 (Tabachnick & Fidell, 2013), the parametric tests were used in the analysis. The mean, standard deviation, skewness and kurtosis scores of the variables are shown in Table 2.

Table 2. Descriptive Values of the Variables

	m	sd	Skewness	Kurtosis
Perceived Knowledge	5.98	1.28	-.409	.512
Beliefs About Government Action	24.40	7.12	.346	-.237
Risk Perceptions	29.54	5.56	-.900	.286
Age	23,56	10.18	1.245	.565
Hogg Eco-anxiety Scale	25.72	9.20	.588	-.235

Descriptive analysis was used to define sample characteristics. To examine the relationship between variables, the Pearson Correlation Coefficient was calculated. To compare the country's eco-anxiety, perceived knowledge, government action, and risk perception ANOVA analysis with Bonferroni post hoc analysis was used. Considering the study's aim to explore eco-anxiety in an adult sample, age was treated as a primary factor in the analyses, whereas other demographic variables such as gender and educational level were not included in the inferential models to maintain analytic focus.

Results

Descriptive Analysis

Totally 2210 participants attended the study. Most participants were women and approximately half of them were undergraduate students. The mean age of the participants was 31.23 (Standard

Deviation = 14.335; Range = 18 – 83). The demographic characteristics of the sample are shown in Table 3.

Table 3. Demographic Characteristics of the Sample

		Frequency	Percentage
Gender	Male	596	32.5
	Female	1224	66.7
	Other	14	0.8
Marital Status	Married	503	22.8
	Single	1210	54.8
	In a relationship	461	20.9
	Other	34	1.5
Education Level	High School	490	22.2
	Undergraduate	1263	57.1
	Postgraduate	423	19.1
	Other	34	1.5

Pearson correlation coefficients among the main study variables are presented in Table 4.2. All correlations were statistically significant ($p < .05$), likely reflecting the influence of the large sample size ($N = 2210$). However, the strength of associations ranged from weak to moderate. Age showed a weak negative correlation with eco-anxiety ($r = –.11$, $p < .01$), indicating that younger participants tended to report higher levels of eco-anxiety. It was also weakly and positively associated with perceived knowledge ($r = .11$, $p < .01$) and beliefs about government action ($r = .09$, $p < .01$). Perceived knowledge was positively correlated with both risk perception ($r = .24$, $p < .01$) and eco-anxiety ($r = .15$, $p < .01$), while it showed a negative association with beliefs about government action ($r = –.22$, $p < .01$). This suggests that participants with higher self-reported knowledge about climate change were more concerned about its risks, yet also more skeptical of governmental efforts. Risk perception demonstrated a moderate positive relationship with eco-anxiety ($r = .33$, $p < .01$), suggesting that greater

perceived threat of climate change is associated with increased emotional and cognitive symptoms of eco-anxiety. Correlation scores are as in Table 4.

Table 4. Correlation Analysis

No.	Variables	1	2	3	4	5
1	Age	1				
2	Perceived Knowledge	0.11**	1			
3	Beliefs About Government Action	0.09**	-0.22**	1		
4	Risk Perceptions	0.05*	0.24**	-0.31**	1	
5	Hogg Eco-anxiety Scale	-0.11**	0.15**	-0.20**	0.33**	1

** p< 0.01, * p< 0.05

A one-way ANOVA was conducted to examine whether participants' scores on perceived knowledge, beliefs about government action, risk perception, and eco-anxiety differed significantly across countries. The results indicated statistically significant differences among the six countries for all four variables ($p < .001$). Table 5 summarizes the mean scores, standard deviations, F values, and post hoc comparisons.

Table 5. Country Comparisons According to Variable

Variable	India (n=389) C1	Italy (n=313) C2	Philippines (n=657) C3	Türkiye (n=420) C4	Trinidad Tobago (n=141) C5	Hungary (n=286) C6	F	Post-hoc	p
Risk Perception	25.45±5.724	31.58±4.011	29.64±5.349	32.45±4.482	29.82±5.092	27.76±4.963	**95.243***	C4, C2 > C3, C5> C1, C6	.000
Beliefs About Government Action	28.26±5.228	18.51±5.357	25.10±7.660	24.57±6.304	26.39±6.091	22.52±6.844	**86.718***	C1, C5 > C3, C4 > C2, C6	.000
Perceived Knowledge	7.60±1.251	8.84±1.091	8.14±1.021	7.57±1.510	8.21±1.143	7.54±1.236	**59.084***	C3, C5 > Others	.000
Eco-anxiety	25.54±8.329	30.66±9.392	25.19±8.640	28.44±8.707	20.94±7.639	16.83±5.612	**79.696***	C2 > C3, C4 >C1, C5 >C6	.000

*p<.001

The Bonferroni results showed that participants from the Philippines and Trinidad and Tobago don't have significant differences in terms of risk perception ($p>.05$). Similarly, Türkiye and Italy don't have significant differences in terms of risk perception ($p>.05$) but these countries have highest risk perception when compared to others followed by the Philippines and Trinidad Tobago.

In terms of perceived knowledge of the causes and consequences of climate change, Türkiye, India, and Hungary don't differ from each other significantly ($p>.05$). As participants from the Philippines and Trinidad and Tobago have the highest perceived knowledge from other countries ($p<.05$), they don't differ each other significantly in terms of perceived knowledge.

Participants from India and Trinidad and Tobago have more positive beliefs about the governmental actions when compared to the other countries ($p<.05$) but they don't differ from each other significantly ($p>.05$). These countries are followed by the Philippines and Türkiye in term of having more positive beliefs about governmental actions. Participants from Italy have the lowest positive beliefs about governmental action.

The Italian participants have the highest eco-anxiety when compared to other countries ($p<.05$). Türkiye and the Philippines follow it, and these two countries don't differ from each other significantly ($p>.05$). Hungarian participants have the lowest eco-anxiety score when compared to other countries ($p<.05$).

Discussion

Psychosocial Correlates of Eco-Anxiety

This study aims to examine the causes of ecological concern and the perception levels of nations regarding climate change by including multiple countries. According to the findings, as participants' ages increase, their trust in the government and perceived level of knowledge also increase. Additionally, while risk perception rises with age, eco-anxiety tends to decrease, indicating that younger individuals are more emotionally affected by climate-related threats. In other words, as participants grow older, they perceive climate risks more cognitively but with reduced emotional reactivity, while also demonstrating greater trust in governmental actions.

A review of the literature reveals similar findings regarding the relationship between age, concern, and trust in government. A study conducted by Clayton and Karazsia (2020) has demonstrated that climate anxiety is more prevalent among young adults. Similarly, a cross-sectional study by Hickman et al. (2021) involving 10,000 young individuals found that young people do not trust government actions concerning climate initiatives, which in turn increases

their anxiety levels. In another study by Agoston, Balazs, and Varga (2024), interviews were conducted with 4,685 adults, 112 high school students, and one of their parents, revealing that younger individuals are more anxious compared to older individuals. Numerous other studies in the literature also indicate that young individuals experience more intense eco-anxiety than older adults (Rocchi et al., 2023; Boluda-Verdu et al., 2022; Patrick et al., 2023). These results consistently emphasize the heightened emotional vulnerability of youth in the face of environmental uncertainty.

Regarding trust in the government, a study by Fritz et al. (2025) utilizing data from 22 different countries found that individuals trust experts more than governments, attributing this preference to transparency, independent funding, and objectivity. Other studies also indicate that, compared to older individuals, younger individuals tend to disapprove of or find governmental actions inadequate (Thompson et al., 2022; Chou et al., 2023; Diffey et al., 2022; Myers, 2022). This widespread perception of inadequacy may explain the negative correlation between trust in government and eco-anxiety found in the current study.

The high level of awareness regarding climate change among the younger age group suggests that this demographic may assume a more active social and political role in the coming years. Particularly, the young population, which finds government policies inadequate, could contribute to increased social mobilization and political demands in the future.

Additionally, studies have identified similar relationships between age and perceived knowledge levels. A review by Lee et al. (2020), which analyzed 51 studies conducted between 1993 and 2018, concluded that perceived knowledge generally increases with age. However, the literature also presents differing results. For instance, Ergun, Karadeniz, and Rivas (2024), using data from 28 European countries, found that age was not a significant variable in the perception of climate change risks. This inconsistency may reflect differences in how perceived knowledge and risk perception are measured, as well as cultural and educational contexts across studies. Several factors may also contribute to the younger generation's heightened risk perception of climate change, including increased exposure through social media (Franzen & Vogl, 2013), the complex and technical language often used in climate discussions, and the inclusion of climate change topics in modern educational curricula (Stevenson et al., 2014).

Interestingly, our findings suggest that while perceived knowledge tends to increase with age, eco-anxiety decreases. One plausible explanation is that greater knowledge among older individuals may enhance perceived coping capacity or foster a sense of control, thereby

reducing anxiety—a pattern consistent with the Transactional Model of Stress and Coping (Lazarus & Folkman, 1984). Therefore, age-related differences in eco-anxiety and knowledge should be interpreted within a broader sociocultural and informational context.

An analysis of the study's other findings reveals that as individuals' perceived knowledge levels increase, their perception of climate change risks also rises, while their trust in the government declines. The literature suggests a widely held belief that government policies aimed at achieving climate targets are perceived as unfair by the public. This perception is largely influenced by negative public opinions regarding the fairness of these measures (Jagers, Martinsson, & Mattii, 2019; Povitkina et al., 2021). In a large-scale study conducted by Hickman et al. (2021), more than half of the 10,000 participants stated that they found government actions to combat climate change inadequate, which led them to feel betrayed. Additionally, several studies in the literature indicate that increased knowledge strengthens climate change risk perception (Shi et al., 2016; Fransson & Garling, 1999).

From a theoretical perspective, these results can be interpreted through the lens of the Transactional Model of Stress and Coping (Lazarus & Folkman, 1984), which suggests that emotional distress arises when a threat is perceived as significant and coping resources are seen as insufficient. Accordingly, individuals who perceive climate change as an uncontrollable and urgent threat, and who lack confidence in institutional solutions, are more likely to experience psychological distress in the form of eco-anxiety.

The study's findings regarding the direction of relationships are consistent. As participants' risk perceptions increase, so do their levels of concern. The findings further suggest that participants generally perceive climate change as a source of substantial future risks, as indicated by their high overall risk perception scores. Additionally, their aggregate scores on the government action scale reflect a critical perspective, suggesting that participants view current measures as insufficient and express limited confidence in governmental transparency. This pattern points to a broader sense of distrust in government policies and a perception that the measures taken may not be adequate.

Cross-National Patterns in Climate Perceptions and Eco-Anxiety

When examining the results across countries, significant cross-national differences emerged in climate risk perception, trust in governmental action, perceived knowledge, and eco-anxiety levels. Türkiye and Italy reported the highest climate change risk perceptions, whereas India and Hungary demonstrated the lowest levels of perceived risk.

In terms of trust in government, Trinidad and Tobago, along with India, exhibited the highest levels of institutional trust, while Italy and Hungary reported the lowest levels. Regarding perceived knowledge, the Philippines and Trinidad and Tobago ranked highest, with no significant difference between them. With respect to ecological concern, Italy reported the highest levels of eco-anxiety, followed closely by Türkiye, while Hungary scored the lowest among the six countries.

These cross-national differences can be interpreted in relation to each country's sociopolitical, environmental, and cultural contexts. One of the primary reasons for the high climate change risk perception in Türkiye and Italy is their location within the Mediterranean climate zone, which has experienced increasing frequency and severity of extreme weather events such as heatwaves, droughts, and wildfires in recent years (The Climate Reality Project, 2024; Salvia et al., 2023). This proximity to visible and tangible climate impacts likely intensifies public perception of environmental threat. Additionally, sectors like agriculture and tourism, which are highly climate-dependent, play a central role in the economies of both countries, reinforcing environmental vulnerability.

Italy and Türkiye reported both high levels of climate risk perception and eco-anxiety, which aligns with findings indicating that frequent exposure to climate-related disasters can amplify emotional responses, especially when institutional trust is lacking (Hickman et al., 2021). Conversely, in India, where perceived climate risks are lower, public confidence in governmental action appears relatively higher. In contrast, Hungary, despite low risk perception, also shows low institutional trust, aligning more closely with Italy in this respect. This pattern indicates that institutional trust may play a buffering role in some contexts; however, this effect is not universal and varies across countries.

In the case of Hungary, the relatively low eco-anxiety scores observed in this study may reflect context-specific patterns rather than a general lack of concern about climate risks. While some studies have reported muted psychological responses such as eco-anxiety compared to certain European contexts (Ágoston et al., 2022), broader surveys (European Commission, 2023) indicate that concern about the climate crisis remains widespread among Hungarians. Additionally, risk perception in Hungary appears to be shaped partly by institutional trust in technological solutions rather than environmental concern (Boholm, 2011). This pattern may also be influenced by mixed signals in national political discourse, as Hungary's government has alternated between pro-climate rhetoric and opportunistic policies, potentially fueling distrust in governmental climate efforts (Clean Energy Wire, 2024).

In Trinidad and Tobago, high levels of perceived knowledge and governmental trust may reflect the country's active engagement in low-carbon transition strategies and the implementation of climate-resilient policies supported by international collaborations (Ramlogan & Nelson, 2023). Public awareness may also be strengthened through community-level adaptation efforts, particularly in coastal regions (Scobie et al., 2023). This alignment between public knowledge, local experience, and institutional efforts may explain the relatively lower eco-anxiety levels despite high climate vulnerability.

The Philippines presents a distinct profile: moderately high eco-anxiety, high perceived knowledge, and moderate trust in government. As one of the most climate-vulnerable countries globally, the Philippines faces severe and recurrent environmental threats including sea level rise and intensified typhoons (Alcantara et al., 2023). Public risk perception is elevated by direct personal experience of these disasters, particularly in coastal and poor communities (Rincon & Virtucio, 2008). Furthermore, the integration of climate change into higher education and community development enhances awareness and fosters both ecological concern and climate literacy (Magulod, 2018; Mantawil & Dilangalen, 2021). This may contribute to the eco-anxiety observed among Filipino participants, while also reinforcing their perceived knowledge.

These cross-national findings suggest that eco-anxiety may be a context-sensitive emotional experience. Rather than being solely an individual reaction, eco-anxiety can be influenced by broader social contexts, including collective beliefs, social norms, and dominant discourses (Clayton & Karazsia, 2020). From the perspective of Lazarus and Folkman's (1984) Transactional Model of Stress and Coping, individuals' appraisals of climate change as a threat and their beliefs about their ability to cope with it may be associated with their levels of eco-anxiety. This framework offers a theoretical lens through which to understand how environmental threats may be cognitively appraised and subsequently translated into emotional responses.

Limitations and Future Directions

While this study offers valuable insights into the cross-national patterns of eco-anxiety, several limitations should be acknowledged. First, the use of a non-probabilistic convenience sampling method limits the generalizability of the findings to the broader populations in each country. Second, the cross-sectional design precludes any causal inferences regarding the relationships between eco-anxiety, age, risk perception, and beliefs about governmental actions. Third, although rigorous translation and cultural adaptation procedures were followed—including

forward–backward translation and expert review—these adaptations have not been independently published and validated in all languages, which should be considered a limitation. Additionally, despite rigorous translation and cultural adaptation procedures, subtle semantic nuances may have influenced participants' interpretations across different contexts. Another limitation is that the study included only participants aged 18 and above, which prevented comparisons between adults and younger cohorts (e.g., children and adolescents); such comparisons could have provided further insights into developmental differences in eco-anxiety.

Future research would benefit from incorporating longitudinal and experimental designs to explore the temporal dynamics of eco-anxiety. Moreover, the inclusion of qualitative approaches may offer deeper insights into context-specific emotional responses and coping strategies. Expanding the geographical scope to include underrepresented regions such as Africa and Latin America would further enhance the global understanding of eco-anxiety. Additionally, innovative and participatory research designs, such as the hybrid participatory action-research and stakeholder analysis method used by Diffey et al. (2022), could provide richer, more inclusive insights by actively involving climate-concerned populations in the research process. These directions may contribute meaningfully to improving environmental awareness across diverse cultural settings and to informing the development of more responsive and context-sensitive public policies.

Conclusion

This study highlights how cultural, political, and social contexts significantly influence psychological responses to climate change, particularly eco-anxiety. It emphasizes eco-anxiety as both an individual and societal phenomenon closely linked to governmental trust and climate risk perceptions, especially among younger populations. Notably, countries frequently experiencing climate-related impacts, such as Italy and Türkiye, demonstrate higher levels of eco-anxiety compared to countries like Hungary, where perceived risks are lower. These findings reveal that eco-anxiety is shaped not only by objective threats but also by social narratives, media influences, and political contexts. The study underscores practical implications for policy, education, and psychological support. Governments should enhance public trust through transparent and inclusive climate actions. Educational initiatives should go beyond mere dissemination of knowledge, empowering individuals with practical strategies to tackle climate challenges. The media should adopt solution-oriented narratives, reducing fear and promoting actionable insights. Examples of such efforts already exist, such as the

"Connecting Climate Minds" initiative led by the Wellcome Trust, which fosters a global dialogue by bringing together policymakers, researchers, health professionals, and community stakeholders to co-create frameworks linking mental health and climate action (Wellcome–Connecting Climate Minds, 2023). Similarly, Finland's "The Eco-Crisis, Our Future and Mental Health" project by MIELI Mental Health Finland provides peer support, workshops, and training for professionals to help communities manage eco-emotions (MIELI Mental Health Finland, 2023). Additionally, the Climate Mental Health Network serves as a global resource hub offering evidence-based tools, educational programs, and community-driven strategies to mitigate the emotional toll of climate change and promote resilience (Climate Mental Health Network, 2025).

From a psychological perspective, specialized interventions within mental health services should address eco-anxiety, complemented by community-based support systems and psychoeducational workshops that promote effective coping strategies. Ultimately, understanding eco-anxiety provides a critical pathway for transforming climate-related psychological burdens into opportunities for social resilience and proactive engagement, necessitating interdisciplinary collaboration.

Statements and Declarations

Ethical Approval

All of the participants were informed about the research, and the research was carried out with their voluntary participation and a written consent was collected. Ethics committee approval of the study was obtained from Istanbul University Cerrahpaşa (No: E. 74555795-050.01.04-420818, date: 28.06.2022). Participants provided informed consent and were informed of their right to withdraw at any time. No personal identifiers were collected.

Consent to participate

Written informed consent was obtained from the participants.

Consent for publication

Not applicable.

Declaration of conflicting interest

The authors declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

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Data Availability Statements

The data supporting this study's findings are not publicly available due to confidentiality restrictions but may be provided by the corresponding author upon reasonable request.

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