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THE ECOLOGY OF WELL-BEING: SELF-ESTEEM, CLIMATE ANXIETY, AND THE MODERATING ROLE OF ENVIRONMENTAL IDENTITY

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Abstract: Climate change anxiety has emerged as a significant psychological concern among young adults, reflecting emotional distress related to environmental degradation and climate-related threats. This study investigated the moderating effects of environmental identity and climate change anxiety on the relationship between self-esteem and psychological well-being among Indonesian young adults (N = 409, aged 18-25 years). Using a cross-sectional correlational design, participants completed measures of self-esteem, psychological well-being, climate change anxiety, and environmental identity. Moderated multiple regression analysis revealed that self-esteem was a significant positive predictor of psychological well-being ($\beta = .210$, $p < .001$), consistent with established literature. Unexpectedly, environmental identity showed a significant negative direct effect on well-being ($\beta = -.107$, $p = .028$), suggesting that strong connection to nature may entail emotional costs. Climate change anxiety did not significantly predict well-being ($p = .069$). Crucially, the hypothesized moderation effect was not significant ($\beta = .044$, $p = .470$), indicating that environmental identity does not influence the self-esteem-well-being relationship. These findings suggest that environmental identity and self-esteem represent separate pathways to well-being rather than interactive mechanisms. Results highlight the need for culturally tailored interventions addressing climate-related distress directly, rather than assuming enhanced self-esteem will mitigate these emerging psychological challenges among young adults in climate-vulnerable contexts.

Keywords: Climate Change Anxiety, Environmental Identity, Self-Esteem, Psychological Well-Being, Young Adults, Indonesia

INTRODUCTION

The pervasive and intensifying effects of climate change have become a major global issue, creating both immediate humanitarian crises and extensive mental health repercussions. This burden falls disproportionately

on young adults, who are uniquely impacted by its enduring consequences (Clayton, 2020). For this cohort, increasing awareness of ecological degradation can induce significant psychological discomfort, manifesting as climate anxiety, a phenomenon marked by worry and apprehension about environmental concerns that can significantly impair mental health and behavior (Hickman et al., 2021; Ogunbode et al., 2022). Continuous exposure to climate-related information and direct experiences with environmental changes exacerbate this distress, impacting overall well-being.

This emotional burden underscores the critical need to identify factors that can buffer these adverse psychological effects. Self-esteem, a core psychological construct linked to general well-being, may significantly influence how individuals perceive and react to environmental dangers (Verplanken et al., 2020). Furthermore, an individual's connection to the natural world and their environmental identity may play a crucial role. It is theorized to mediate the relationship between self-esteem and psychological well-being in the context of climate change, potentially acting as a protective factor against its negative impacts (Whitburn et al., 2020).

The escalating ecological crisis thus presents considerable psychological challenges, particularly for younger generations (Pihkala, 2022). Understanding the prevalence and social-psychological mechanisms of eco-anxiety is essential for supporting at-risk populations like young adults, who frequently face distress about the irreversible effects of climate change on their futures (Wullenkord et al., 2021). This study proposes that environmental identity, which embodies an individual's connection and responsibility to the natural world, may serve as a significant moderator in the relationship between self-esteem and psychological well-being amidst climate anxiety (Clayton & Karazsia, 2020). Specifically, it will investigate how environmental identity might mitigate the adverse relationship between climate anxiety and well-being, particularly in individuals with varying levels of self-esteem.

By clarifying these intricate relationships, this research aims to enhance the comprehension of resilience factors in the face of ecological threats. Such insight is vital for developing targeted interventions that not only relieve

eco-anxiety symptoms but also encourage proactive environmental behavior and enhance overall life satisfaction (Doherty & Clayton, 2023). Ultimately, this study seeks to provide essential insights into how environmental identity and self-esteem function as protective factors, guiding the creation of specific psychological interventions to bolster resilience during ecological crises.

This study will integrate these psychological elements into a cohesive empirical model, moving beyond mere descriptions of ecological distress to examine the interaction between environmental identity and climate anxiety. By investigating how this interaction influences the fundamental role of self-esteem in overall well-being among young adults, this research will yield critical insights into the protective and detrimental factors that characterize resilience. This investigation aims to establish an empirical foundation for the formulation of targeted psychological interventions tailored to the growing global crisis.

Research Objective

This study aims to investigate the complex interplay between environmental concern and personal well-being by examining the relationship between climate anxiety and self-esteem, with a specific focus on the moderating role of environmental identity. The primary objectives are to determine the direct correlation between climate anxiety and self-esteem levels among individuals, and to assess the extent to which a strong environmental identity buffers or exacerbates this relationship. Furthermore, this research seeks to explore how the degree to which an individual defines themselves in relation to the natural world influences their psychological resilience, ultimately providing a clearer understanding of the conditional factors that determine whether ecological distress is associated with diminished or maintained personal well-being.

METHODOLOGY

Research Design

This study employs a quantitative approach with a cross-sectional correlational design. The objective of this design is to examine the relationships between variables, specifically the moderating roles of climate change anxiety and environmental identity in the relationship between self-esteem and psychological well-being among young adults in Indonesia. This design was selected as it allows the researcher to observe predictive

relationships and interactions between variables without manipulating participant conditions.

Participants and Sampling

The target population for this study was young adults aged 18–25 years residing in Indonesia. An a priori power analysis was conducted using G*Power (Faul et al., 2009) to determine the minimum sample size required for a moderated multiple regression analysis. Assuming a small effect size ($f^2 = 0.02$), a significance level of $\alpha = .05$, and a desired power of .95, the analysis indicated a required sample size of approximately 652 participants.

Due to practical constraints in data collection and the use of a non-probability convenience sampling method, the obtained sample fell short of this target. A total of 451 participants responded to the online questionnaire. After data cleaning, 42 participants were excluded due to not meeting inclusion criteria, yielding a final analytic sample of 409 participants. A post-hoc power analysis conducted using the obtained sample size (N = 409) and the observed effect size from the final model ($R^2 = .069$, $f^2 = 0.074$) indicated that the achieved power for detecting the overall model effect was approximately .99, exceeding the recommended .80 threshold (Cohen, 1988). However, the study may have been underpowered to detect smaller interaction effects, as the observed interaction term yielded a negligible effect size ($\beta = .044$, $f^2 = 0.001$).

Measures / Instruments

- Self-Esteem: Measured using the Brief Rosenberg Self-Esteem Scale (BRSES), which consists of 5 items on a 4-point Likert scale. Higher scores indicate higher levels of self-esteem.
- Well-Being: Measured using the WHO Five Well-Being Index (WHO-5), consisting of 5 items on a 6-point Likert scale. Higher scores represent better mental well-being. This scale has been adapted by Latifa et al. (2023).
- Climate Change Anxiety: Measured using the Climate Change Anxiety Scale (Clayton & Karazsia, 2020), which comprises two dimensions: cognitive-emotional impairment and functional

impairment. This instrument has been adapted into an Indonesian version by Jaro'ah and Saffana (2023).

- Environmental Identity: Measured using the Environmental Identity (EID) Scale (Clayton, 2003), containing 11 items on a Likert scale.

For instruments not yet available in Indonesian, a translation-back translation process will be conducted, followed by a pilot study to ensure the validity and reliability of the instruments within the local context.

Data Collection Procedure

Data collection will be conducted online by distributing questionnaires via social media and student networks. Before completing the survey, participants will be provided with an informed consent form explaining the study's purpose, the voluntary nature of participation, data confidentiality, and the right to withdraw at any time. Upon providing consent, participants will complete the demographic section and the research instruments. The estimated time for completion is 10–15 minutes. Data collection is planned to take place over a period of 10 weeks.

Data Analysis

All statistical analyses were conducted using Jamovi (Version 2.6.44) with the GAMLj module for moderation analysis. Preliminary analyses included descriptive statistics and normality assessments for all study variables. Internal consistency reliability was evaluated using Cronbach's alpha for each measurement instrument, namely Self-Esteem, Environmental Identity, Climate Change Anxiety, and Psychological Well-Being. Cronbach's alpha coefficients ranged from .667 to .824, indicating acceptable to good levels of internal consistency across the study measures.

To test the moderating effects of climate change anxiety and environmental identity on the relationship between self-esteem and psychological well-being, a moderated multiple regression analysis was performed. All continuous predictor variables were mean-centered prior to analysis to facilitate interpretation of interaction terms and reduce multicollinearity (Aiken & West, 1991). The model included psychological well-being as the outcome variable, self-esteem as the focal predictor, and both climate change anxiety and environmental identity as moderators, with their respective interaction terms (Self-Esteem × Climate Change Anxiety and Self-Esteem × Environmental Identity). Statistical significance was evaluated at an alpha level of $p < .05$, and effect sizes (standardized coefficients β and R2 change) were reported to indicate the practical magnitude of observed effects.

RESULTS

Demographics Data

A total of 451 young adults participated in this study. Following data screening procedures, 42 participants (9.3%) were excluded due to ineligibility and inconsistent responses (e.g., contradictory or unreliable answer patterns), resulting in a final analytic sample of 409 participants.

The final sample (see Table 1) comprised 209 females (51.1%), 178 males (43.5%), and 22 participants (5.4%) who preferred not to disclose their gender. Participants' ages ranged from 18 to over 25 years, with the majority falling within the 22–25 years age bracket (n = 202, 49.4%), followed by those aged 19–21 years (n = 176, 43.0%), 18-year-olds (n = 30, 7.3%), and one participant aged over 25 years (0.2%). The approximate mean age of participants was 21.4 years (SD = 2.1), calculated by assigning median values to each age category (18, 20, 23.5, and 26 years, respectively).

Regarding educational attainment, the majority of participants had completed senior high school (n = 237, 58.0%), followed by those with a bachelor's degree (n = 117, 28.6%), master's degree (n = 34, 8.3%), junior high school (n = 13, 3.2%), and elementary school (n = 4, 1.0%). Four participants (1.0%) held a doctoral degree. In terms of professional status, the sample consisted primarily of college students (n = 217, 53.1%), followed by private sector employees (n = 103, 25.2%), civil servants (n = 88, 21.5%), and unemployed individuals (n = 1, 0.2%).

Geographically, participants were drawn from across Indonesia, representing 34 provinces. The largest subsets of participants resided in DKI Jakarta and Jawa Tengah (n = 22 each), followed by Banten (n = 17), Jawa Barat and Jawa Timur (n = 16 each), and Gorontalo (n = 14). The remaining participants (n = 184, 45.0%) were distributed across other provinces, reflecting a diverse national sample.

Table 1. Demographics Data

Data	Frequency	Percentage
Gender		
Female	209	51,10%
Male	178	43,52%
Prefered Not Answer	22	5,38%
Age		
18 Age	30	7,33%
19 - 21 Age	176	43,03%
22 - 25 Age	202	49,39%
> 25 Age	1	0,24%
Last Education		
Elementary School	4	0,98%
Junior High School	13	3,18%
Senior High School	237	57,95%
Bachelor's Degree	117	28,61%
Master's Degree	34	8,31%
Doctoral Degree	4	0,98%
Profession		
College Student	217	53,06%
Private Sector Employee	103	25,18%
Civil Servant	88	21,52%
Unemployed	1	0,24%
Domicile by Provinces		
DKI Jakarta	22	5,38%
Jawa Tengah	22	5,38%
Banten	17	4,16%
Jawa Barat	16	3,91%
Jawa Timur	16	3,91%

Gorontalo	14	3,42%
Papua Selatan	13	3,18%
Kalimantan Tengah	13	3,18%
Lampung	12	2,93%
Sumatera Utara	12	2,93%
Sulawesi Selatan	12	2,93%
Kalimantan Timur	11	2,69%
Sumatera Barat	11	2,69%
Nusa Tenggara Timur	11	2,69%
Bali	11	2,69%
Other Provinces	184	45,00%
Total	**409**	**100,00%**

Preliminary Analysis and Model Overview

A moderated multiple regression analysis was conducted to examine the relationship between self-esteem, environmental identity, and climate change anxiety on the psychological well-being of young adults. Prior to analysis, all continuous predictor variables (self-esteem, environmental identity, and climate change anxiety) were mean-centered to aid in the interpretation of the interaction term and to reduce potential multicollinearity (Aiken & West, 1991). The assumption of normality, linearity, and homoscedasticity of residuals were assessed and found to be tenable.

Table 2. ANOVA Omnibus tests

	SS	df	F	p
Model	531.94	4	7.489	<.001
Self Esteem	332.87	1	18.745	<.001
Environmental Identity	85.94	1	4.840	0.028
Climate Change Anxiety	59.19	1	3.333	0.069
Self Esteem ✻ Environmental Identity	9.30	1	0.524	0.470
Residuals	7174.30	404		

Total	7706.24	408

The overall regression model, which included the main effects of self-esteem, environmental identity, climate change anxiety, and the two-way interaction term (Self-Esteem × Environmental Identity), was statistically significant, $F(4, 404) = 7.489$, $p < .001$. The predictor set accounted for a modest proportion of the variance in psychological well-being, $R^2 = .069$, Adjusted $R^2 = .060$, indicating that approximately 6% of the variability in well-being among young adults can be attributed to the variables in the model. According to Cohen's (1988) conventions, this represents a small-to-medium effect size.

Main Effects

An examination of the individual parameter estimates revealed a significant positive main effect for Self-Esteem, $B = 0.378$, $SE = 0.087$, $\beta = .210$, $t(404) = 4.330$, $p < .001$, 95% CI [0.206, 0.549]. This finding suggests that higher levels of self-esteem are robustly associated with enhanced psychological well-being, consistent with a substantial body of literature identifying self-esteem as a core component of positive mental health.

Table 3. Fixed Effects Parameter Estimates

			95% Confidence Interval					
Names	**Estimate**	**SE**	**Lower**	**Upper**	**β**	**df**	**t**	**p**
(Intercept)	17.60002	0.2084	17.19038	18.00965	0.0000	404	84.463	<.001
Self Esteem	0.37769	0.0872	0.20620	0.54918	0.2098	404	4.330	<.001
Environmental Identity	-0.04515	0.0205	-0.08549	-0.00480	-0.1066	404	-2.200	0.028
Climate Change Anxiety	0.03277	0.0180	-0.00252	0.06806	0.0882	404	1.826	0.069
Self Esteem ✻ Environm	0.00772	0.0107	-0.01325	0.02870	0.0440	404	0.724	0.470

ental Identity

Conversely, a significant negative main effect was observed for Environmental Identity, B = -0.045, SE = 0.021, β = -.107, t(404) = -2.200, p = .028, 95% CI [-0.085, -0.005]. This result indicates that, after controlling for the other variables in the model, a stronger identification with the natural environment was unexpectedly associated with slightly lower levels of psychological well-being. This direct negative association warrants further theoretical consideration, potentially reflecting the phenomenon of "eco-anxiety" or emotional burden associated with deep environmental concern, distinct from the anxiety measured by the climate change anxiety scale.

The main effect of Climate Change Anxiety did not reach statistical significance, B = 0.033, SE = 0.018, β = .088, t(404) = 1.826, p = .069, 95% CI [-0.003, 0.068]. While the effect was positive and trending towards significance, it did not meet the conventional alpha threshold of .05, suggesting that climate change anxiety, as measured in this study, does not have a robust independent linear association with psychological well-being in this sample.

Interaction Effect and Moderation Analysis

Contrary to the primary hypothesis of this study, the interaction term between Self-Esteem and Environmental Identity was not statistically significant, B = 0.008, SE = 0.011, β = .044, t(404) = 0.724, p = .470, 95% CI [-0.013, 0.029]. This finding provides clear evidence that environmental identity does not moderate the relationship between self-esteem and psychological well-being. In other words, the strength and direction of the association between how young adults feel about themselves and their overall psychological well-being does not change as a function of their connectedness to nature.

Table 4. Simple effects of Self Esteem : Omnibus Tests

Moderator levels				
Environmental Identity	**F**	**Num df**	**Den df**	**p**

Mean-1-SD	4.09	1.00	404	0.044
Mean	18.75	1.00	404	<.001
Mean+1-SD	11.98	1.00	404	<.001

Table 5. Simple effects of Self Esteem : Parameter estimates

Moderator levels			**95% Confidence Interval**					
Environmental Identity	**Estimate**	**SE**	**Lower**	**Upper**	**β**	**df**	**t**	**p**
Mean-1-SD	0.298	0.14076	0.00829	0.589	0.166	404	2.02	0.044
Mean	0.378	0.08072	0.20620	0.549	0.210	404	4.33	<.001
Mean+1-SD	0.457	0.13020	0.19744	0.716	0.254	404	3.46	<.001

Note. Simple effects are estimated keeping constant other independent variable(s) in the model

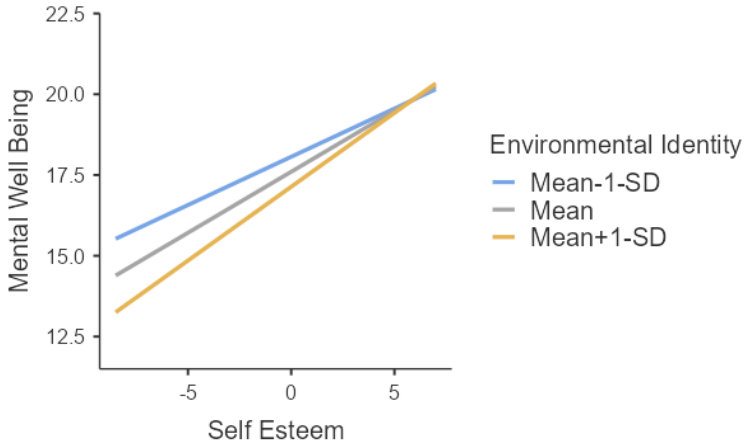

Figure 1. Plots

To fully probe the hypothesis and provide a comprehensive account of the data, simple slopes analysis was conducted to examine the conditional effect of self-esteem on well-being at three levels of the proposed moderator (Environmental Identity): one standard deviation below the mean, at the mean, and one standard deviation above the mean. As would be expected given the non-significant interaction, the relationship between self-esteem and well-being was significant and positive at all three levels. The effect was significant at low levels of environmental identity (-1 SD; B = 0.298, SE = 0.148, β = .166, p = .044), at mean levels (B = 0.378, SE = 0.087, β = .210, p < .001), and at high levels (+1 SD; B = 0.457, SE = 0.132, β = .254, p < .001). The overlapping confidence intervals and the non-significant omnibus interaction test confirm that the subtle increase in slope magnitude across levels of environmental identity is not statistically meaningful.

DISCUSSION

The current study sought to investigate the moderating effects of environmental identity and climate change anxiety on the association between self-esteem and psychological well-being among young adults in Indonesia. The results exhibited several significant patterns that necessitate meticulous examination in relation to the current literature.

In line with a strong body of research, self-esteem was found to be a strong positive predictor of psychological well-being. This finding is consistent with a recent quantitative synthesis of 40 meta-analyses by Zell and Johansson (2024), which indicated a robust overall correlation between self-esteem and health and well-being (r = .31), especially regarding mental health outcomes (r = .42). The stability of self-esteem as a psychological resource is well-documented, with research demonstrating that, although self-esteem is influenced by both stable and dynamic factors over time, its correlation with well-being remains consistently positive across developmental stages (Anusic & Schimmack, 2016). In Indonesia, where collectivist values influence self-concept development, the protective role of self-esteem against psychological distress seems equally strong, applying insights from Western populations to this under-researched cultural context.

Conversely, an unexpected adverse direct impact of environmental identity on psychological well-being was noted. Although initially counterintuitive,

this finding is corroborated by emerging literature that investigates the psychological costs of environmental connection. Maral et al. (2025) recently showed that environmental identity affects mental health in both direct and indirect ways, such as through eco-anxiety and intolerance of uncertainty. Their structural equation modeling indicated that individuals possessing a robust environmental identity may exhibit increased susceptibility to climate-related distress when they are unable to adequately regulate their emotional responses. Likewise, a systematic review conducted by Burrows et al. (2024) indicated that chronic, gradual climate change conditions correlate with detrimental mental health outcomes, including depression, anxiety symptoms, and non-specific psychological distress, while qualitative studies have further clarified negative emotions such as worry, grief, and frustration. These results indicate that environmental identity, although possibly beneficial for encouraging pro-environmental behavior (Le & Manh, 2022; Vera et al., 2024), may concurrently subject individuals to emotional distress when facing ecological crises.

Regarding climate change anxiety, this variable did not attain statistical significance as an independent predictor of psychological well-being, although the effect was positive and approaching significance ($p = .069$). This pattern aligns with the systematic review conducted by Cosh et al. (2024), which identified that eco-anxiety consistently exhibits small-to-large positive correlations with psychological distress, depression, and anxiety symptoms across various studies; however, the strength of these associations significantly fluctuates depending on the operationalization of eco-anxiety. Clayton and Karazsia's (2020) conceptualization notably differentiates between cognitive-emotional impairment and functional impairment dimensions of climate anxiety, with the former possibly signifying an adaptive concern that drives action rather than merely pathological distress. The nearly significant trend in this study may illustrate this duality, suggesting that climate anxiety serves as a legitimate response to environmental threats without inherently compromising overall psychological well-being.

Most importantly, the proposed interaction between self-esteem and environmental identity was not significant, suggesting that environmental identity does not moderate the self-esteem-well-being relationship. This null finding adds significant theoretical depth to Environmental Identity Theory (Clayton, 2003; Clayton & Karazsia, 2020). EIT asserts that individuals with

a self-concept closely associated with the natural environment exhibit heightened emotional responses to environmental concerns (Scopelliti et al., 2022). However, the current findings indicate that this emotional reactivity functions independently of the self-esteem pathway to well-being. In other words, the mechanisms through which environmental identity affects well-being may be distinct from those involving global self-evaluations.

Recent research on psychological capital and climate anxiety provides a potential explanation for this independence. Kappan and Thiagarajan (2026) discovered that Generation Z experiences more significant emotional and functional effects of climate anxiety than older generations; however, psychological resources like self-efficacy provide limited buffering effects. Their research, based on Environmental Identity Theory, illustrated that environmental identity influences the intensity and significance of climate-related emotions, whereas psychological resources dictate whether intensified emotions result in functional impairment or adaptive coping. Applying this framework to the current findings, self-esteem may constitute a psychological resource; however, its buffering effect may be limited to specific aspects of climate-related distress rather than influencing the entire identity-well-being pathway. The non-significant interaction may also indicate measurement issues, as the Climate Anxiety Scale assesses cognitive-emotional responses that may not entirely represent the experiential aspects of environmental identity pertinent to young adults in Indonesia.

The small amount of variance explained by the overall model ($R^2 = .069$) underscores the multifactorial nature of psychological well-being in this population. A recent Indonesian study conducted by Cini et al. (2025) identified non-communicable disease risk factors, notably excessive sedentary behavior from video gaming and computer usage, as correlated with diminished psychological well-being among adolescents in Jakarta and South Sulawesi. Their findings underscore the necessity of integrating behavioral and lifestyle factors with psychological variables in the assessment of well-being outcomes among Indonesian youth. Furthermore, sociocultural factors specific to the Indonesian context, including the influence of religious coping, family cohesion, and community support systems, may constitute significant unmeasured variables that affect

psychological well-being independently of the constructs analyzed in this study.

Several limitations should be acknowledged. First, the cross-sectional design prevents causal conclusions about the relationships between self-esteem, environmental identity, climate anxiety, and psychological well-being. Longitudinal studies are necessary to investigate the evolution of these associations over time, especially as young adults experience developmental transitions and heightened exposure to climate-related information. Second, the employment of convenience sampling and the online survey methodology may constrain the generalizability of the findings to the wider Indonesian young adult population. The sample was geographically diverse, encompassing 34 provinces; however, it did not proportionately reflect Indonesia's demographic distribution. Third, the study depended solely on self-report instruments, which could be influenced by social desirability bias and common method variance. Future research would benefit from multi-method approaches that include behavioral indicators, informant reports, or clinical interviews.

Fourth, the sample size (N = 409) did not meet the predetermined target of 652 participants as determined by power analysis. Post-hoc power analysis indicated sufficient power for identifying main effects (achieved power = .99 for the overall model); however, the study might have been insufficiently powered to detect smaller interaction effects. The interaction term produced a negligible effect size ($\beta = .044$, $f^2 = 0.001$), indicating that even with an expanded sample, the moderating effect would probably continue to be non-significant or trivial in scale. Nonetheless, replication using larger and more heterogeneous samples is warranted.

Fifth, employing the Climate Anxiety Scale (Clayton & Karazsia, 2020) to assess climate change anxiety may inadequately reflect culturally specific expressions of climate-related distress within the Indonesian context. Recent systematic reviews have underscored the necessity for culturally tailored measures that reflect the manifestation of climate anxiety in diverse sociocultural contexts (Cosh et al., 2024; Burrows et al., 2024). Future research ought to explore qualitative methodologies to comprehend how Indonesian young adults perceive and articulate climate-related emotions, thereby contributing to the creation of culturally relevant assessment instruments.

Subsequent research should investigate possible mediators of the environmental identity-well-being nexus. Maral et al. (2025) identified intolerance of uncertainty as a mediating mechanism, positing that individuals with a robust environmental identity may experience declines in well-being when they are unable to endure the uncertainty associated with climate change projections. Investigating whether coping strategies, social support, or meaning-making processes mitigate this relationship could enhance intervention development. Furthermore, due to the substantial adverse direct impact of environmental identity, it is imperative for research to examine whether this signifies authentic psychological distress or, conversely, embodies "constructive suffering" that drives pro-environmental engagement. Pinho (2025) discovered that climate anxiety served as a mediator in the relationship between pro-environmental behavior and well-being, indicating that the emotional detriments associated with environmental concern may be counterbalanced by the psychological advantages of taking action. Longitudinal studies investigating the predictive capacity of environmental identity on subsequent pro-environmental behavior, and the potential enhancement of well-being through such behavior, would elucidate the temporal dynamics of these relationships.

Even though the moderation finding was not significant, this study carries important implications for both theory and practice. Theoretically, the findings indicate that Environmental Identity Theory and self-esteem research may serve as complementary yet distinct frameworks for comprehending young adult well-being. Environmental identity appears to affect well-being through pathways that do not intersect with global self-evaluations, potentially involving emotional responses to environmental threats, value-congruent behavior, or social identification with environmental movements. Future theoretical integration ought to delineate more explicitly the mechanisms by which environmental identity influences mental health outcomes.

Practically, the substantial main effects of self-esteem and environmental identity indicate potential intervention targets. Enhancing self-esteem via evidence-based programs continues to be an effective approach for fostering psychological well-being among Indonesian young adults. At the same time,

the negative association between environmental identity and well-being suggests that individuals with strong environmental connections may benefit from psychological support to manage climate-related distress. Psychoeducational interventions that normalize climate anxiety, encourage adaptive coping strategies, and promote collective action may assist in transforming environmental concern into well-being enhancement rather than emotional burden.

CONCLUSION

This research examined the moderating effects of environmental identity and climate change anxiety on the relationship between self-esteem and psychological well-being among a cohort of Indonesian young adults. The results unequivocally demonstrate that self-esteem functions as a significant protective factor for psychological well-being, in alignment with decades of international research, while environmental identity does not influence the strength of this association. The pronounced adverse direct impact of environmental identity on well-being, alongside the non-significant trend regarding climate change anxiety, indicates that environmental connection may entail emotional costs that function independently of global self-assessments.

The lack of a moderating effect suggests that Environmental Identity Theory and self-esteem frameworks may serve as separate explanatory pathways to well-being, rather than as interactive mechanisms. This theoretical elucidation enhances comprehension of the interplay between environmental issues and psychological functioning among young adults in a non-Western context. The limited variance elucidated by the overarching model highlights the intricacy of psychological well-being and the necessity for holistic models that integrate sociocultural, behavioral, and environmental factors with individual psychological resources.

As climate change continues to worsen around the world, it is still very important to study how it affects the mental health of young people, especially those who live in places that are vulnerable to climate change, like Indonesia. The current findings indicate that interventions aimed at climate-related distress should directly address environmental identity and climate anxiety, rather than presuming that enhancing global self-esteem will mitigate these emerging psychological challenges among young adults. Subsequent research ought to utilize longitudinal designs, culturally tailored

instruments, and multifaceted methodologies to enhance the understanding of the intricate interrelations among environmental identity, climate anxiety, self-esteem, and well-being across various developmental phases and cultural settings.

Informed Consent Statement

Informed consent was obtained from all subjects involved in the study. Participants were provided with a clear explanation of the research objectives, procedures, and their rights prior to data collection. All participants were informed that their participation was voluntary, that they could withdraw at any time without penalty, and that their responses would be kept confidential and anonymized for the purposes of this research.

Conflict of Interest

The authors declare no conflicts of interest. The research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

Ethics Statement

This study received ethical approval from the Lembaga Penelitian dan Pengabdian Kepada Masyarakat Komite Etik Universitas Negeri Malang (Approval Number/Reference: 20.11.11/UN32.14.2.8/LT/2025). All procedures performed were in strict accordance with the ethical standards for health-related research involving human participants, as outlined in the World Health Organization's (WHO) 2011 "Standards and Operational Guidance for Ethics Review of Health-Related Research with Human Participants."

Author Contributions

BR and AEYAM conceptualized the study and developed the methodology. Formal analysis and data visualization were performed by BR. The original draft was prepared by BR, and critical review and editing were conducted by AEYAM. All authors have read and approved the final version of the manuscript.

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Data Availability Statement
The data presented in this study are available on request from the corresponding author.

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