



Eco-Anxiety and its relationship with Meaning in Life and Intolerance of Uncertainty in Young Adults

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Abstract: The present study aimed to examine the relationship between eco-anxiety, intolerance of uncertainty, and meaning in life, as well as to explore the predictive role of these variables in explaining eco-anxiety. A sample of 231 participants was assessed using standardized measures of eco-anxiety, intolerance of uncertainty, and meaning in life, including both presence and search dimensions. Descriptive statistics indicated moderate levels of eco-anxiety and intolerance of uncertainty, along with relatively high levels of meaning in life among participants. Pearson correlation analysis revealed a strong positive relationship between eco-anxiety and intolerance of uncertainty, and moderate negative relationships between eco-anxiety and both presence and search for meaning in life. Multiple regression analysis demonstrated that intolerance of uncertainty, presence of meaning, and search for meaning significantly predicted eco-anxiety, with the model explaining 69.4% of the variance. Intolerance of uncertainty emerged as the strongest predictor. The findings suggest that individuals who struggle to tolerate uncertainty are more vulnerable to eco-anxiety, whereas meaning in life serves as a protective factor, although its predictive role is influenced by interrelationships among variables. The study highlights the importance of both cognitive and existential factors in understanding psychological responses to climate change and suggests implications for interventions aimed at reducing eco-anxiety.

Keywords: *Eco-Anxiety, Intolerance of Uncertainty, Meaning in Life, Presence of Meaning, Search for Meaning, Climate Change, Psychological Distress, Regression Analysis*

1. Introduction

Climate change has emerged as one of the most significant global challenges of the twenty-first century (IPCC, 2021). While much research has focused on its environmental, economic, and political consequences, increasing attention has also been given to its psychological effects (Clayton, Manning, Krygsman, & Speiser, 2017). Among these emotional responses, eco-anxiety has recently gained considerable attention in psychological research (Pihkala, 2020).

Eco-anxiety refers to chronic fear or worry about environmental degradation and the future of the planet (American Psychological Association, 2017). Although concern for environmental issues can motivate pro-environmental behaviors such as conservation and activism, persistent worry about the future of the Earth can also contribute to psychological distress (Clayton et al., 2017). Climate change is a complex and long-term global phenomenon that creates uncertainty about environmental, social, and economic futures (IPCC, 2021). Consequently, individuals may feel overwhelmed by the perceived magnitude of the problem and their limited ability to control it.

At the same time, psychological factors influence how individuals interpret and respond to environmental threats. Two such factors that may play a crucial role in shaping emotional responses to climate change are meaning in life and intolerance of uncertainty. Meaning in life refers to the degree to which individuals perceive their lives as purposeful, coherent, and significant. Individuals who possess a strong sense of meaning often demonstrate greater resilience and psychological well-being (Steger, 2009). In contrast, intolerance of uncertainty refers to the tendency to react negatively to uncertain or unpredictable situations (Carleton, 2016). People who have high intolerance of uncertainty often experience heightened anxiety when confronted with ambiguous or uncertain outcomes.

Climate change represents a particularly relevant context for examining these constructs because it involves significant uncertainty about the future. Scientific projections about environmental changes involve probabilities and estimates rather than absolute certainty. Individuals who struggle with uncertainty may therefore experience greater distress when exposed to climate-related information (Carleton, 2016). Conversely, individuals who possess a strong sense of meaning in life may be better able to cope with these uncertainties

by interpreting environmental challenges as opportunities for meaningful action (Steger, 2009).

Understanding the relationships among eco-anxiety, meaning in life, and intolerance of uncertainty is therefore important for contemporary psychological research. Examining these variables together may provide valuable insights into the psychological processes that influence how individuals emotionally respond to climate change and environmental threats.

Eco-Anxiety

Eco-anxiety is increasingly recognized as a psychological response to environmental degradation and climate change. It is commonly defined as persistent worries, fears, or distress related to ecological crises and the future of the planet. Unlike traditional anxiety disorders, eco-anxiety is often considered a rational reaction to real environmental threats rather than an irrational fear (Pihkala, 2020).

Researchers have suggested that eco-anxiety may manifest in several ways, including excessive worry about environmental disasters, feelings of helplessness regarding climate change, sadness about the loss of biodiversity, and anger toward institutions perceived as failing to address environmental problems (Clayton et al., 2017). Individuals experiencing eco-anxiety may also report difficulty concentrating, sleep disturbances, or emotional distress when exposed to climate-related news.

One important theoretical framework that helps explain eco-anxiety is Stress and Coping Theory, proposed by Lazarus and Folkman. According to this theory, psychological stress occurs when individuals perceive environmental demands as exceeding their coping resources. Climate change represents a large-scale global threat that individuals often feel powerless to control. When people perceive environmental threats as severe but believe they lack the ability to influence outcomes, feelings of anxiety and distress may emerge.

Another theoretical perspective relevant to eco-anxiety is Environmental Identity Theory. Environmental identity refers to the extent to which individuals incorporate nature and the environment into their sense of self. Individuals with strong environmental identities often feel emotionally connected to nature. As a result, environmental destruction may be experienced as a personal loss, intensifying emotional responses such as grief or anxiety.

Research indicates that younger generations, particularly adolescents and young adults, report higher levels of eco-anxiety (Hickman et al., 2021). This may be because they perceive themselves as inheriting a future shaped by environmental instability. While eco-anxiety can motivate individuals to engage in pro-environmental behavior and activism,

excessive anxiety may lead to feelings of helplessness, hopelessness, and psychological distress.

Meaning in Life

Meaning in life is a central concept within positive psychology and refers to the perception that one's life has purpose, significance, and coherence (Steger et al., 2006). Individuals who experience a strong sense of meaning in life tend to report greater life satisfaction, psychological well-being, and resilience in the face of adversity.

One of the most influential theoretical perspectives on meaning in life comes from Logotherapy, developed by Viktor Frankl. According to this theory, the primary motivational force in humans is the will to meaning. Frankl argued that individuals strive to find meaning even in the most difficult circumstances. Meaning can be discovered through creative activities, relationships with others, and the attitudes individuals adopt toward unavoidable suffering.

Another relevant framework is the Meaning Maintenance Model (Heine, Proulx, & Vohs, 2006). This model suggests that individuals are motivated to maintain a stable sense of meaning and coherence in their lives. When events threaten their sense of order or predictability, individuals attempt to restore meaning through cognitive or behavioral strategies. For example, individuals may reaffirm their values, strengthen social relationships, or engage in purposeful activities.

Individuals with a strong sense of purpose tend to cope more effectively with stress and adversity because they interpret challenges as part of a broader life narrative. Instead of viewing stressful events as meaningless disruptions, they perceive them as experiences that contribute to personal growth and development.

In the context of climate change, meaning in life may play an important role in shaping emotional responses to environmental threats. Individuals who perceive their lives as meaningful may channel their concerns about environmental issues into constructive actions such as environmental activism, sustainable living, or community engagement. In this way, meaning in life may transform anxiety about climate change into motivation for positive change.

Intolerance of Uncertainty

Intolerance of uncertainty is a psychological construct that refers to the tendency to perceive uncertain or ambiguous situations as stressful and threatening (Steger, 2009). Individuals who have high intolerance of uncertainty often find it difficult to cope with situations where outcomes are unpredictable or unclear.

Another theoretical perspective relevant to intolerance of uncertainty is Uncertainty Management Theory (Brashers, 2001). This theory suggests that individuals experience psychological distress when they lack sufficient information about future outcomes. In response, individuals attempt to manage uncertainty by seeking information, avoiding threatening situations, or reinterpreting events in ways that reduce ambiguity.

Climate change represents a highly uncertain phenomenon. Predictions about environmental changes involve complex scientific models and probabilistic estimates. This uncertainty may be particularly distressing for individuals who find it difficult to tolerate ambiguity. As a result, intolerance of uncertainty may play a significant role in the development and intensity of eco-anxiety.

Relationship Between the Key Constructs

Eco-anxiety, meaning in life, and intolerance of uncertainty are interconnected in a way that shapes how individuals emotionally respond to climate change. Intolerance of uncertainty acts as a risk factor, since climate change involves probabilistic and ambiguous outcomes, individuals who struggle with uncertainty are prone to catastrophic thinking and heightened eco-anxiety. Meaning in life, on the other hand, serves as a protective buffer on two fronts: it reduces the psychological threat posed by uncertainty by providing a stable sense of purpose and clear values, and it transforms eco-anxiety from a paralyzing emotion into a motivating force for constructive action such as activism or sustainable living. In essence, the same environmental concern can lead to either psychological distress or adaptive engagement depending on how much meaning an individual has in life and how well they tolerate uncertainty.

1.1 Rationale of the Study

Climate change has increasingly become not only an environmental and global concern but also a significant psychological issue, giving rise to emotional responses such as eco-anxiety. As highlighted in the present study, eco-anxiety is characterized by persistent worry, fear, and distress about environmental degradation and the uncertain future of the planet. The rationale for conducting this study lies in the need to understand the psychological mechanisms underlying eco-anxiety, particularly in the context of young adults who are more vulnerable to climate-related distress. Therefore, examining the relationship between eco-anxiety and intolerance of uncertainty is essential to identify cognitive vulnerabilities that contribute to increased distress.

In addition to cognitive factors, the study also considers meaning in life as an important existential variable. Meaning in life, including both presence and search for

meaning, has been widely associated with psychological resilience and well-being. Individuals with a strong sense of purpose are better able to cope with stress and adversity. In the context of climate change, meaning in life may serve as a protective factor by helping individuals interpret environmental challenges in a constructive and purposeful manner rather than as overwhelming threats. Despite the increasing attention to eco-anxiety globally, there is a limited body of research that integrates both cognitive (intolerance of uncertainty) and existential (meaning in life) factors in understanding eco-anxiety, especially among Indian young adults. Most existing studies have examined these variables in isolation. Therefore, there is a clear research gap in exploring how these factors interact simultaneously to influence eco-anxiety.

Furthermore, young adults represent a particularly relevant population for this study, as they are at a developmental stage characterized by identity formation, future planning, and heightened exposure to climate-related information. Understanding how eco-anxiety operates within this group can provide valuable insights for psychological interventions and preventive strategies. Thus, the present study is justified in its attempt to examine the relationship between eco-anxiety, intolerance of uncertainty, and meaning in life, as well as to explore their predictive roles. By doing so, the study aims to contribute to the growing field of climate psychology and provide a more comprehensive understanding of the psychological impact of climate change.

2. Research Methodology

2.1 Aim

To study the relationship between eco-anxiety, meaning in life, and intolerance of uncertainty among young adults.

2.2 Objectives

- To examine the relationship between eco-anxiety and meaning in life in young adults.
- To examine the relationship between eco-anxiety and intolerance of uncertainty in young adults.
- To explore whether meaning in life and intolerance of uncertainty predict eco-anxiety in young adults.

2.3 Hypotheses

H1. There will be a significant relationship between eco-anxiety and meaning in life in young adults.

H2. There will be a significant positive relationship between eco-anxiety and intolerance of uncertainty in young adults.

H3. Meaning in life and intolerance of uncertainty will significantly predict eco-anxiety in young adults.

2.4 Variables

- **Independent Variables (IVs):**
 - Meaning in Life
 - Intolerance of Uncertainty
- **Dependent Variable (DV):**
 - Eco-Anxiety

2.5 Research Design

Quantitative Research Design

The present study employs a quantitative, non-experimental, correlational research design to investigate the relationship between eco-anxiety, meaning in life, and intolerance of uncertainty among young adults. A quantitative approach is appropriate as it allows for the objective measurement and statistical analysis of the variables under study.

The correlational design is used to examine the direction and strength of relationships between eco-anxiety, meaning in life, and intolerance of uncertainty without manipulating any variables. Additionally, a predictive component is incorporated through regression analysis to determine whether meaning in life and intolerance of uncertainty significantly predict levels of eco-anxiety.

Since no variables are manipulated and data is collected in a natural setting, the study is non-experimental in nature.

2.6 Sample

The study will consist of approximately 250-300 young adults aged between 18–26 years. Participants will be selected using purposive sampling.

The study included 200-250 participants between 18-26 years of age. For this study, element selection criteria have been deployed and the representation basis is non-probability, hence it is purposive sampling (Kothari, 2004). A sample of 231 participants aged between 18 and 26 years was taken for this study. This study will use 231 young adults from the Delhi-NCR area.

2.7 Description of Tools

Eco-Anxiety Scale: The Eco-Anxiety Scale developed by Hogg et al. (2021) was used to assess the level of anxiety related to environmental issues and climate change. The scale

consists of 13 items that measure emotional, cognitive, and behavioral aspects of eco-anxiety. Responses are recorded on a 5-point Likert scale ranging from 1 (Strongly Disagree) to 5 (Strongly Agree). The total score is obtained by summing all item responses, with higher scores indicating greater levels of eco-anxiety.

The scale has demonstrated good psychometric properties, with a reported Cronbach's alpha of approximately 0.86, indicating high internal consistency. It has also shown satisfactory construct validity, supporting its use in measuring eco-anxiety among young adults.

Meaning in Life Questionnaire (MLQ): The Meaning in Life Questionnaire (MLQ) was developed by Steger, Frazier, Oishi, and Kaler (2006) to assess individuals' perception of meaning in life. The scale consists of 10 items, divided into two subscales:

- Presence of Meaning (5 items)
- Search for Meaning (5 items)

Participants respond on a 7-point Likert scale ranging from 1 (Absolutely Untrue) to 7 (Absolutely True). Scores are calculated separately for each subscale by summing the relevant items. Higher scores indicate greater presence of or search for meaning in life. The MLQ has demonstrated strong reliability, with Cronbach's alpha ranging from 0.81 to 0.86 for the Presence subscale and 0.84 to 0.92 for the Search subscale. It also shows good construct and convergent validity across different populations.

Intolerance of Uncertainty Scale – Short Form (IUS-12): The Intolerance of Uncertainty Scale – Short Form (IUS-12) was developed by Carleton, Norton, and Asmundson (2007) as a brief version of the original scale by Freeston et al. (1994). It is used to measure an individual's tendency to perceive uncertainty as stressful and unacceptable.

The scale consists of 12 items and includes two dimensions:

- Prospective Anxiety (fear and anxiety about future uncertainty)
- Inhibitory Anxiety (avoidance and paralysis in uncertain situations)

Responses are measured on a 5-point Likert scale ranging from 1 (Not at all characteristic of me) to 5 (Entirely characteristic of me). Total scores are obtained by summing all items, with higher scores indicating greater intolerance of uncertainty. The IUS-12 has demonstrated excellent reliability, with a Cronbach's alpha of approximately 0.91. It also shows strong construct validity and is widely used in anxiety-related research.

2.8 Procedure

Made a survey using Google Forms, dividing it into three sections that matched the questionnaires. Before participants could answer the questions, they had to agree to take part.

Sent out the survey to the participants. Collected data by purposefully selecting participants through a method called Purposive Sampling Technique. After gathering the data, scored it using the guidelines provided with the questionnaires.

2.9 Statistical Analysis

The data collected from the participants will be analyzed using statistical software SPSS (Statistical Package for the Social Sciences). Initially, descriptive statistics will be computed to summarize the data. This will include measures such as mean, standard deviation, and range for eco-anxiety, meaning in life, and intolerance of uncertainty.

To examine the relationships between the variables, Pearson's Product-Moment Correlation will be conducted. This analysis will determine the direction and strength of the relationship between eco-anxiety, meaning in life, and intolerance of uncertainty.

Further, multiple regression analysis will be performed to assess the predictive role of meaning in life and intolerance of uncertainty on eco-anxiety. Eco-anxiety will be treated as the dependent variable, while meaning in life and intolerance of uncertainty will be entered as independent variables.

2.10 Ethical Considerations

Participants are fully informed about the nature and purpose of the study, potential risks and benefits, and their rights as participants. They are provided voluntary, informed consent before participating, and consent forms are clear and understandable.

The privacy and confidentiality of participants are protected by ensuring that data is kept secure and anonymized whenever possible. Participants' personal information will be kept confidential, and data will be reported in aggregate form to prevent identification of individual participants.

2.11 Data Analysis

The data collected from the participants were analyzed using the Statistical Package for the Social Sciences (SPSS). The study consisted of a total sample of 231 young adults aged between 18–26 years, selected using purposive sampling. The sample included both male and female participants. Descriptive statistics, including mean, standard deviation, minimum, and maximum values, were computed to summarize the data for eco-anxiety, intolerance of uncertainty, and meaning in life. The results indicated that eco-anxiety had a mean score of 13.71 ($SD = 3.02$), reflecting a moderate level among participants. Further statistical analyses, including Pearson's correlation and multiple regression, were conducted to examine the relationships between variables and to assess the predictive role of intolerance of uncertainty and meaning in life on eco-anxiety.

3. Results

Table 1. *Correlation of Variables Eco Anxiety (EA), Intolerance of Uncertainty (IOU), Presence- Meaning in Life (MLP), Search- Meaning in Life (MLS)*

	HEAS	IUS	MLP	MLS
EA	1	.774**	-.536**	-.464**
IOU	.774**	1	-.875**	-.815**
MLP	-.536**	-.875**	1	.931**
MLS	-.464**	-.815**	.931**	1

** . Correlation is significant at the 0.01 level (2-tailed).

Table presents the Pearson correlation coefficients among eco-anxiety (EA), intolerance of uncertainty (IOU), presence of meaning in life (MLP), and search for meaning in life (MLS).

A strong positive correlation was found between eco-anxiety and intolerance of uncertainty

($r = .774$, $p < .01$), indicating that individuals with higher intolerance of uncertainty tend to experience greater eco-anxiety.

Eco-anxiety showed a moderate negative correlation with presence of meaning ($r = -.536$, $p < .01$) and search for meaning ($r = -.464$, $p < .01$), suggesting that individuals with higher levels of meaning in life report lower eco-anxiety.

Intolerance of uncertainty was found to have a strong negative correlation with both presence of meaning ($r = -.875$, $p < .01$) and search for meaning ($r = -.815$, $p < .01$), indicating that individuals with greater difficulty tolerating uncertainty tend to have lower levels of meaning in life.

4. Discussion

The present study examined the relationships among eco-anxiety, intolerance of uncertainty, and meaning in life in young adults. Participants reported moderate levels of eco-anxiety ($M = 13.71$, $SD = 3.02$), reflecting a normative and contextually appropriate response to environmental concerns rather than clinically severe distress.

The first key finding revealed a strong positive correlation between eco-anxiety and intolerance of uncertainty ($r = .774$, $p < .01$), establishing intolerance of uncertainty as a central cognitive risk factor. Individuals who struggle to tolerate ambiguity are especially vulnerable to climate-related distress because climate change is inherently uncertain and

future-oriented. Such individuals tend to engage in catastrophic thinking, overestimate threats, and feel a diminished sense of control, all of which intensify eco-anxiety.

The second finding demonstrated moderate negative relationships between eco-anxiety and both presence of meaning ($r = -.536$, $p < .01$) and search for meaning ($r = -.464$, $p < .01$), supporting the protective role of meaning in life. Drawing on Frankl's existential framework, individuals with a stronger sense of purpose tend to reframe environmental challenges as opportunities for contribution and growth rather than overwhelming threats, thereby reducing feelings of helplessness and anxiety.

The regression analysis confirmed a highly significant predictive model ($R^2 = .694$, $p < .001$), with intolerance of uncertainty emerging as the strongest predictor ($\beta = 1.301$, $p < .001$), followed by presence of meaning ($\beta = .355$, $p = .004$) and search for meaning ($\beta = .265$, $p = .009$). Notably, the positive regression coefficients for meaning in life — despite their negative correlations with eco-anxiety — are attributable to multicollinearity between the two meaning dimensions ($r = .931$). Overall, the findings confirm that eco-anxiety is shaped not only by environmental threats but by individuals' cognitive and existential capacities, with intolerance of uncertainty amplifying distress and meaning in life serving as a key psychological buffer.

5. Conclusion

The present study, titled “*Eco-Anxiety and its Relationship with Meaning in Life and Intolerance of Uncertainty in Young Adults*,” aimed to examine the psychological processes underlying eco-anxiety by integrating cognitive and existential perspectives. In light of the increasing psychological impact of climate change, the study focused on understanding how young adults respond emotionally to environmental threats and how internal factors shape these responses. Based on existing literature, eco-anxiety was conceptualized as a rational response to environmental crises, though it may lead to psychological distress when excessive. Intolerance of uncertainty was identified as a key cognitive vulnerability contributing to anxiety, while meaning in life was considered an important protective factor that enhances resilience and well-being. However, limited research had examined these variables together, particularly in the context of young adults.

To address this gap, the study employed a quantitative, correlational research design with a sample of 231 young adults aged 18–26 years. Standardized measures were used to assess eco-anxiety, intolerance of uncertainty, and meaning in life, and data were analyzed using descriptive statistics, correlation, and regression analysis. The findings revealed that

participants experienced moderate levels of eco-anxiety and intolerance of uncertainty, along with relatively high levels of meaning in life. A strong positive relationship between eco-anxiety and intolerance of uncertainty indicated that individuals who have difficulty coping with uncertainty are more likely to experience heightened climate-related anxiety. In contrast, eco-anxiety showed a negative relationship with both presence and search for meaning in life, suggesting that meaning acts as a protective factor that reduces distress.

Further, regression analysis demonstrated that intolerance of uncertainty and meaning in life significantly predict eco-anxiety, with intolerance of uncertainty emerging as the strongest predictor. Overall, these findings highlight that eco-anxiety is influenced not only by external environmental threats but also by internal cognitive and existential processes. In conclusion, the study emphasizes the importance of addressing both intolerance of uncertainty and meaning in life in understanding and managing eco-anxiety. Enhancing individuals' ability to tolerate uncertainty and fostering a sense of purpose may help reduce climate-related distress and promote adaptive coping among young adults. As climate change continues to affect psychological well-being, integrating such insights into mental health interventions and awareness programs becomes increasingly important.

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