

Article

From Eco-Anxiety to Ecological Responsibility: An Eco-Theological Perspective on Pro-Environmental Behaviour in Urban Society

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Abstract

This study critically examines the relationship between eco-anxiety and pro-environmental behaviour, with particular attention to the mediating role of the urban context and the contribution of an eco-theological perspective. Previous empirical studies have tended to assume a linear relationship between eco-anxiety and pro-environmental behaviour, overlooking the possibility that excessive anxiety may trigger apathy or “ecological paralysis” when it is not accompanied by a strong sense of self-efficacy and environmental responsibility. Using a critical literature review approach, this research argues that urban dynamics including structural barriers, social norms, and limited opportunities for environmental engagement, play a significant role in shaping how individuals respond to eco-anxiety. From an eco-theological perspective, environmental concern can be understood not only as a psychological response to ecological crisis but also as an ethical and spiritual responsibility toward creation and the natural environment. Values such as stewardship, care for creation, interconnectedness, and ecological responsibility may help transform eco-anxiety into meaningful pro-environmental action. By integrating psychological, urban, and eco-theological perspectives, this study addresses a theoretical gap in understanding the complex relationship between eco-anxiety and environmental behaviour. The findings also have practical implications for developing environmental policies, education, and psychological interventions that promote both ecological well-being and a deeper sense of moral responsibility toward the environment.

Keywords: Eco-anxiety, Pro-environmental behaviour, Environmental psychology, Eco-Theological Perspective.

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Introduction

Environmental issues such as air pollution, the climate crisis, and the increasing accumulation of waste have become global problems that affect not only ecological aspects but also the psychological condition of human beings. One psychological phenomenon that has received growing attention is eco-anxiety, namely chronic anxiety resulting from concerns about environmental threats (Coffey et al., 2021; Pihkala, 2020). Although awareness of this issue continues to rise, there remains a gap between the emergence of eco-anxiety and the actual actions taken by individuals, particularly in urban settings (Mathers-Jones & Todd, 2023).

Previous studies, both in Indonesia and abroad, have shown a positive correlation between eco-anxiety and pro-environmental behavior. However, the findings are often inconsistent. Some studies suggest that anxiety can motivate individuals to take action (Paramita et al., 2020; Rifayanti et al., 2019), while others indicate that excessive anxiety leads to “eco-paralysis,” in which individuals feel overwhelmed and eventually refrain from acting (Stanley et al., 2021). This highlights the need for deeper analysis to better understand the complex dynamics of the relationship between eco-anxiety and real-world behavior.

In recent years, research on eco-anxiety has grown rapidly within the field of environmental psychology. Contemporary studies have begun to move beyond simple correlational relationships toward more complex analyses of underlying mechanisms. First, many studies emphasize mediating and moderating factors, such as self-efficacy and social support (Hornsey et al., 2015; Lakey & Orehek, 2011). Several findings show that eco-anxiety can only encourage pro-environmental behavior if individuals feel capable of making a difference (D. Webb et al., 2013). Second, research has started to break down eco-anxiety into several dimensions, such as affective anxiety, rumination, and anxiety about personal impacts (Hogg et al., 2021; Stanley et al., 2021). Not all dimensions have the same effect: rumination, for example, tends to lead to eco-paralysis, whereas affective anxiety is more likely to promote action. Third, much contemporary research targets vulnerable populations, especially younger generations (Generation Z and millennials), who are considered the most affected by environmental issues (Asril et al., 2025). The focus on urban populations is particularly relevant, as cities often serve as both centers of environmental problems and hubs for environmental movements (Usman et al., 2024; T. L. Webb et al., 2014).

Nevertheless, several research gaps remain. First, most studies still focus on Western contexts, making their findings less generalizable to Indonesia, which has a different sociocultural background (Nu'man & Noviati, 2021). Second, few studies specifically examine how contextual factors in Indonesian urban environments such as access to information, social norms, and the availability of recycling facilities may

influence the relationship between eco-anxiety and pro-environmental behavior (Rifayanti et al., 2019). Third, the dimensions of eco-anxiety themselves have rarely been studied in depth, leaving unclear whether all forms of anxiety exert similar effects on environmental behavior (Jarrett et al., 2024).

This study aims to identify the levels of eco-anxiety and pro-environmental behavior among urban populations. It is expected to provide an empirical overview of the psychological condition and behavioral responses of urban communities to environmental issues.

Method

This study employs a conceptual research method to comprehensively analyze relevant literature on eco-anxiety and pro-environmental behavior (Snyder, 2019). This approach is chosen to construct a strong theoretical argument, identify current research trends, and address existing gaps in the literature. The research process begins with a systematic literature search through credible academic databases, such as Scopus, Web of Science, PubMed, and Google Scholar, following a structured framework like PRISMA (Moher et al., 2009).

The main keywords used include “eco-anxiety,” “environmental anxiety,” “pro-environmental behavior,” “pro-environmental action,” and “urban context.” The selection of articles, journals, books, and reports will be limited to publications from the last 10–15 years to ensure relevance and the novelty of data.

Once the literature has been collected, the study proceeds with qualitative content analysis (Hsieh & Shannon, 2005). This stage involves critical reading, interpretation, and synthesis of findings from various sources. The data will be classified into thematic categories (Braun & Clarke, 2006), such as the definition of eco-anxiety, its triggering factors, behavioral manifestations, and the role of mediating and moderating variables (Pihkala, 2020). Furthermore, the study will analyze differences between research focusing on general populations and those focusing on urban populations, in order to identify the distinctiveness of the urban context. From this synthesis, a new conceptual framework will be constructed to explain how eco-anxiety dynamics interact with pro-environmental behavior in modern societies.

As the final outcome, this study will not only provide a literature review but also offer both theoretical and practical contributions. The results of the analysis will formulate arguments explaining the relationship between eco-anxiety and pro-environmental behavior, highlight inconsistencies in previous findings, and identify areas that require further empirical investigation (Stanley et al., 2021). In addition, the findings may serve as the basis for developing psychological intervention strategies or educational campaigns that are more effective not only raising awareness but also empowering individuals to take action (Hickman et al., 2021). Thus, this study aims to strengthen the theoretical foundations of environmental psychology in Indonesia and

open new insights for the development of practical solutions.

Result and Discussion

Conceptualizing Eco-Anxiety and Pro-Environmental Behavior

The view that eco-anxiety directly triggers pro-environmental behaviour is overly simplistic. Emotions do not always produce linear responses. A critical perspective highlights that anxiety can have contradictory effects. On the one hand, anxiety can serve as a powerful internal motivator, driving individuals to act (for example, by participating in demonstrations or changing their lifestyle). This occurs when anxiety is coupled with a strong sense of self-efficacy namely, the belief that one's actions can make a difference (Duerden & Witt, 2010; Iannello et al., 2020).

On the other hand, excessive anxiety without a sense of control can lead to "eco-paralysis." In such conditions, individuals perceive environmental problems as too large and unmanageable, leading to despair and apathy. Instead of acting, they may withdraw or deny the issue altogether. Therefore, an accurate conceptualization must view eco-anxiety as a variable whose effects depend on mediating factors such as self-efficacy and social support (Petzold et al., 2023).

First, it is important to distinguish between individual and collective behaviour. Many empirical studies are limited to individual behaviours, such as recycling or conserving energy. However, significant environmental impact often requires collective and political action. Thus, eco-anxiety should also be recognized as a potential driver of broader actions, such as participation in social movements, signing petitions, or voting for pro-environment candidates (Piret & Boivin, 2019). These behaviours may have a greater impact than personal habit changes.

Second, there is a difference between overt (visible) and covert (less visible) behaviours. Beyond easily observable actions, pro-environmental behaviour also includes cognitive changes and consumption patterns that are not always apparent to others. Examples include improved environmental literacy or the decision to boycott products from environmentally unfriendly companies. Although not always visible, these behaviours form an essential foundation for sustainable change (Li et al., 2024). Comprehensive research must therefore acknowledge and measure the full spectrum of these behaviours to fully understand how eco-anxiety shapes human responses (Nakamura et al., 2020b).

Thus, a comprehensive conceptualization must integrate the entire spectrum of actions from personal to political in order to provide a holistic understanding of how eco-anxiety influences human responses to the global crisis.

Empirical Studies on the Eco-Anxiety–Pro-Environmental Behavior Relationship

Most empirical studies on this relationship rely on quantitative methods, such as questionnaires or surveys, to measure levels of eco-anxiety and pro-environmental behavior (Coffey et al., 2021; Jarrett et al., 2024). This approach has several critical limitations. First, external validity is often low because these studies are typically conducted on easily accessible populations, such as university students or social media users, who may not represent the general population (D. Webb et al., 2013; T. L. Webb et al., 2014). Second, there is a risk of response bias: participants may provide socially desirable answers rather than accurate reflections of their actual behavior. For instance, someone might report that they recycle frequently when, in reality, they do not (Nu'man & Noviati, 2021; Rifayanti et al., 2019).

Furthermore, such studies often fail to capture the complexity of causal relationships. A positive correlation does not necessarily mean that eco-anxiety causes pro-environmental behaviour. It may be that individuals already engaged in pro-environmental behaviour (e.g., activists) become more aware and, as a result, more anxious about environmental issues (Stanley et al., 2021). Thus, it is important to use longitudinal or experimental research designs to disentangle the actual direction of causality (Duerden & Witt, 2010).

Empirical research on eco-anxiety and pro-environmental behaviour must move beyond simple correlation analyses to explore causal mechanisms. A key critique of much of the existing work is its inability to explain why anxiety does not always translate into concrete action (Petzold et al., 2023; Stanley et al., 2021). To address this limitation, stronger studies must identify and test relevant mediating and moderating variables.

Self-efficacy serves as a key mediator. An individual may feel highly anxious about environmental conditions, but if they lack confidence that their actions can make a difference, such anxiety is more likely to turn into despair or apathy (Hornsey et al., 2015). Conversely, strong belief in one's ability to act can transform anxiety into motivation (Iannello et al., 2020). Likewise, social support from family, friends, or communities' acts as a moderating variable. This support facilitates pro-environmental action, as shared anxiety within groups can be converted into more organized and effective collective action (Lakey & Orehek, 2011).

Beyond psychological factors, access to infrastructure is also crucial. Anxiety without access to practical solutions is difficult to translate into action. For example, someone may be anxious about plastic waste, but without adequate recycling facilities in their community, their motivation cannot be implemented (Usman et al., 2024). Therefore, comprehensive research must consider the complex interactions between psychological conditions, social support, and infrastructure availability to

provide a more accurate picture of how eco-anxiety can be harnessed to encourage meaningful behavioural change (Li et al., 2024; Petzold et al., 2023).

To summarize, empirical studies that focus solely on simple correlations between eco-anxiety and pro-environmental behaviour are insufficient. More critical and meaningful research should adopt multi-method approaches, combining survey data with in-depth interviews or ethnographic methods (Asril et al., 2025), and explicitly test mediating and moderating variables (Nakamura et al., 2020a). Such approaches would yield a more accurate and comprehensive understanding of how psychological conditions interact with social realities to shape behaviour (Piret & Boivin, 2019).

The Dynamics of Urban Context as a Mediator of Psychological Relationships

The urban environment, with all its complexity, is not merely a passive backdrop. It functions as an active mediating variable that significantly alters the relationship between psychological conditions, such as eco-anxiety, and actual behavioral responses (Usman et al., 2024). A critique of studies that ignore this context is that they fail to explain why individuals with the same level of anxiety can exhibit very different responses. Urban social and infrastructural dynamics play a crucial role here (Petzold et al., 2023).

Intense exposure to information in urban centers tends to heighten eco-anxiety. However, this effect is often moderated by socioeconomic disparities. Individuals from middle- and upper-class groups may be more vulnerable to eco-anxiety because their basic needs are met, allowing them to focus on broader issues. Conversely, for lower socioeconomic groups, daily survival takes priority, making environmental issues feel less urgent or relevant (Iannello et al., 2020).

Urban infrastructure also serves as an important determinant. While cities often provide facilities that facilitate pro-environmental behavior, such as recycling systems and public transportation, they also pose significant structural barriers. Car dependency, high levels of consumption, and limited green spaces can all serve as major obstacles (Li et al., 2024). Academic critiques argue that urban residents' eco-anxiety may fail to translate into action due to these barriers. This condition can transform eco-anxiety from a driver of action into feelings of frustration and apathy, rather than motivation for proactive behavior (Duerden & Witt, 2010).

Beyond physical infrastructure, social norms in urban environments play a significant role in shaping individual behavior. Diverse and dynamic communities create unique social dynamics that can facilitate positive environmental responses. In some urban areas, actions once seen as "exceptional" have now become widely accepted social norms. For example, bringing reusable shopping bags or opting for public transportation is no longer considered unusual but rather a part of expected

social etiquette (Nu'man & Noviati, 2021; Rifayanti et al., 2019). This normalization creates a supportive environment in which individuals feel more comfortable and motivated to adopt pro-environmental behaviors because they see others doing the same. Social norms thus serve as unwritten guidelines that reduce psychological barriers to action (Hornsey et al., 2015).

Urban contexts are also often hubs for environmental social movements. Personal eco-anxiety can find collective expression through activist groups or environmentally concerned communities. Interactions within these groups transform individual anxiety into organized collective action (Hogg et al., 2021). Through collaboration, individuals not only realize they are not alone in their anxiety but also experience an increase in collective efficacy the belief that as a group, they have the capacity to make significant changes (Lakey & Orehek, 2011). This sense of collective efficacy ultimately motivates individuals to act further and more consistently in pro-environmental behavior (Asril et al., 2025).

In conclusion, critical studies must view the urban context not as a neutral environment but as a social and physical ecosystem that actively mediates and moderates psychological relationships. Understanding these dynamics is key to designing effective and contextually relevant urban interventions (Coffey et al., 2021; Jarrett et al., 2024).

Practical Implications and Policy Recommendations Based on Psychological Findings

The first critical argument centers on the risk of overgeneralization in applying psychological findings. Although research shows a correlation between eco-anxiety and pro-environmental behavior, not all empirical studies have demonstrated a strong causal relationship (Coffey et al., 2021; Hogg et al., 2021). Policy recommendations must therefore be based on solid evidence, not mere assumptions. For example, if a study finds that eco-anxiety motivates action only among individuals with high self-efficacy, then policy recommendations should specifically focus on building self-efficacy through training programs or community projects (Hornsey et al., 2015; Mathers-Jones & Todd, 2023), rather than merely disseminating information that could exacerbate anxiety. Effective practical implications must distinguish between interventions that simply “feel right” and those that are empirically proven to be effective (Dantes et al., 2024).

The second critical argument concerns the social context and ethical issues in policy formulation. Policies based on environmental psychology cannot be applied universally without considering local contexts (Duerden & Witt, 2010). A policy that succeeds in one city (e.g., recycling incentives in affluent areas) may not be effective in another facing different economic challenges (Usman et al., 2024). Moreover, there

are ethical concerns about using psychology to influence public behavior. Academic critiques should ask whether policies designed to “nudge” people such as behavioral interventions risk being manipulative or paternalistic (Piret & Boivin, 2019). It is essential to ensure that policy recommendations are based not only on effectiveness but also on principles of transparency, empowerment, and individual autonomy (Lakey & Orehek, 2011). Policies should therefore be designed to facilitate pro-environmental choices, not to impose them (D. Webb et al., 2013).

The novelty of this study lies in its ability to move beyond earlier empirical works that often focus narrowly on direct correlations between eco-anxiety and pro-environmental behaviour (Jarrett et al., 2024). Rather than viewing eco-anxiety as a linear driver, this research critically conceptualizes it as an ambivalent emotion whose effects depend on mediating variables. By explicitly examining the roles of self-efficacy and social support, this study makes a significant theoretical contribution (Iannello et al., 2020). It offers a more nuanced model, explaining why the same level of anxiety can generate divergent responses sometimes motivating action, but at other times triggering eco-paralysis (Hogg et al., 2021). This argument enriches the literature by providing a more sophisticated framework for understanding the psychological dynamics underlying environmental action (Nu'man & Noviati, 2021; Rifayanti et al., 2019).

In addition to conceptual novelty, the study also offers strong contextual novelty by focusing on the urban environment. Much existing research tends to generalize findings without considering contextual roles (Li et al., 2024). This study critically views the city not as a passive backdrop but as an active variable mediating the relationship between anxiety and behavior (Petzold et al., 2023). It examines how structural barriers (e.g., dependence on private transportation) and social dynamics (e.g., collective norms and social movements) in urban areas modify the ways individuals respond to eco-anxiety (Nakamura et al., 2020a). By highlighting this complexity, the study provides unique and relevant insights that can be directly applied to designing interventions and policies tailored to urban environments, filling a major gap in existing environmental psychology literature (T. L. Webb et al., 2014).

Conclusion

Studies on the relationship between eco-anxiety and pro-environmental behavior require a more critical and multidimensional approach. The main argument highlights that this relationship is not linear but mediated by psychological factors such as self-efficacy and social support. Eco-anxiety can serve as a driver of action; however, without confidence and support, it may turn into paralysis (eco-paralysis).

Moreover, research must specifically consider the urban context as an active variable that shapes this dynamic. Structural barriers and social norms in urban settings can moderate how eco-anxiety is translated into concrete action. Overall, the novelty of this study lies in its ability to reconceptualize this complex relationship and apply it to a specific context, thereby providing more relevant practical implications for designing effective policies and interventions in the future.

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