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# The Mediating Role of Perceived Efficacy in the Relationship of Climate Anxiety and Pro-Environmental Behaviors among Young Adult Filipinos

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## ABSTRACT

*The Philippines is vulnerable to environmental impacts, from the destruction of homes, disruption of livelihoods, displacements, and death, prompting more studies of its effects in Environmental psychology. The study's results are important in understanding the involvement of the relationship among climate anxiety, pro-environmental behaviors, perceived self-efficacy, and perceived collective efficacy among individuals who are most impacted by climate change. This study explores the mediating role of Perceived Efficacy in the relationship between climate anxiety and pro-environmental behaviors of 312 Filipinos aged 18 to 30 through an online survey. A positive correlation was found between climate anxiety and pro-environmental behaviors in both private and public spheres. In the mediation analysis, higher anxiety resulted in results of increased perceived efficacy, showing an increased involvement in pro-environmental behaviors among young adult Filipinos. This highlights the significance of perceived efficacy in promoting environmental actions among young adult Filipinos, suggesting an understanding of possible measures to alleviate the effects of climate change for young adult Filipinos affected by the health impacts and climate-related fatalities.*

***Keywords:*** *Climate Anxiety; Pro-environmental behaviors; Perceived Self-Efficacy; Perceived Collective Efficacy*

## INTRODUCTION

The Philippines is recognized as one of the country's most vulnerable to climate change (Asian Disaster Reduction Center, 2021). The country lies within the Pacific typhoon belt, and faces an average of 20 typhoons each year, five of which are destructive, leading to the destruction of houses, disruption of livelihoods, displacements, and the death of hundreds (Aruta et al., 2022). Despite the significant environmental challenges, there are few studies on environmental psychology in the Philippines, notably on climate change's mental health effects. Recent data suggests that Filipino youth are feeling climate anxiety (Reyes et al., 2021; Simon et al., 2022). In the Philippines, climate anxiety may arise through four distinct pathways, as proposed by Aruta and Guinto (2022): (1) direct and indirect exposure to extreme weather events, (2) slow-onset environmental changes, (3) increased education and awareness about climate change, and (4) recognition of inadequate global and local climate action. This study explores the interplay

between climate anxiety, pro-environmental behaviors, and perceived efficacy among young adult Filipinos. The findings will offer an understanding of the role of perceived efficacy in influencing environmental behaviors, signifying that perceived efficacy could utilize climate anxiety as a motivating factor for sustainability initiatives among young adult Filipinos.

In 2018, the Intergovernmental Panel on Climate Change (IPCC) issued a report indicating that global temperature increases should be limited to 1.5°C to avoid catastrophic health impacts and millions of climate-related fatalities. Past emissions have made it quite likely to cause significant catastrophes in the future. In 2022, the IPCC released its third landmark climate report, informing people that the world would almost certainly attain the level of carbon dioxide required to push global temperatures above an average rise of 1.5 degrees Celsius above pre-industrial levels in just five or six years. Once attained, the effects will become permanent, including hot extremes in most populated areas, high precipitation in certain areas, major sea-level rise, major biodiversity loss, drought, and precipitation shortages in others, making it uninhabitable for people (UN Environment Programme, 2021; IPCC, 2022).

A report from the IPCC (2022) found that a rapidly changing environment is posing an increasing danger to mental health and psychosocial well-being. This comprises anything from emotional distress to anxiety, depression, grief, and suicide ideation (IPCC, 2022). Given the growing worldwide recognition of the climate catastrophe, it is critical to understand the mental health effects elicited by it (WHO, 2022). This is especially true during the last decade, in which increased efforts have been made to investigate the mental health ramifications of climate change. The repercussions disproportionately affect demographics such as socioeconomic status, gender, and age (WHO, 2022).

Climate Anxiety is gaining attraction in the media (Maran & Begotti, 2021). Reports have shown that children and adolescents have anxiety symptoms because of the deterioration of the environment and the fear that civilizations' futures are in danger (Burke et al., 2018).

Climate anxiety is defined by The Handbook of Climate Psychology (2020) as a "heightened emotional, mental or somatic distress in response to dangerous changes in the climate system. Still, it suggests that 'paying heed to what is happening…is a healthier response than turning away in denial or disavowal." While these experiences commonly contain anxiety, worry, and other eco-anxiety-related feelings, the labels eco-anxiety and climate anxiety have gained prominence in recent years and have been used interchangeably. This has led to various definitions of Climate Anxiety/Eco-Anxiety. The most well-known description is from a report by Clayton et al. (2017) of The American Psychological Association and ecoAmerica, which describes Eco-Anxiety as "a chronic fear of environmental doom." Many researchers saw this description as too narrow.

Susan Clayton (2020), the report's principal author, says that rather than a fundamental issue, climate anxiety should be viewed as a significant indicator of an individual's worry about the status of the globe. Pihkhala (2020) distinguishes eco-anxiety from climate anxiety, arguing that "eco-anxiety refers to any concern about an ecological crisis, whereas climate anxiety refers to any distress strongly related to anthropogenic climate change." Clayton (2020) contends that the anxiety an individual feels is helpful in reflecting their worry and concern about the climate crisis. Climate anxiety would be used in this study to describe participants' worry, dissatisfaction, and concern about environmental and ecological difficulties induced by climate change.

Western research has provided most of the results regarding climate anxiety. Significant levels of climate-related distress have been documented worldwide, with children and adolescents being especially vulnerable (Wu et al, 2020). Climate and eco-anxiety were shown to be extremely high among children interviewed in various countries between 2016 and 2021 (Hickman, 2019, 2020, 2021). One billion children, or over half of the world's 2.2 billion, reside in one of the 33 "extremely high-risk" nations, according to a 2021 report from the United Nations Children's Fund (UNICEF).

Hickman et al. (2021) investigated a global, large-scale study on the link between children and adolescents' climate concerns and the perceived government reaction. Respondents in every nation were concerned about climate change. Feelings of sadness, anxiety, anger, powerlessness, helplessness, and guilt were felt by more than 50% of the respondents. Betrayal rather than assuredness was experienced regarding the government's poor responses. These feelings were said to impact the everyday lives and functioning of

over 45% of the respondents. Experiences of climate anxiety and discomfort were linked to an inadequate government response and feelings of betrayal. Similarly, Leiserowitz et al. (2021) conducted a study through Yale's Program on Climate Change Communication and Facebook Data for Good, examining climate change perceptions, attitudes, policy preferences, and behaviors of Facebook users in 31 nations and territories. This research revealed that 78% of Filipino respondents consider climate change "extremely" or "very" personally significant. Furthermore, nine out of 10 Filipinos expressed being "very" or "somewhat" worried about climate change. Rocchi (2024) found that climate anxiety is linked to intentions and actions related to pro-environmental behaviors, with positive correlations observed across various cultural groups.

According to the Climate Psychology Alliance, psychologists and psychotherapists should avoid overtly seeking to erase climate anxiety and instead work with individuals to establish strong morale that allows them to confirm and explore their feelings without deviating. As a result, mental health practitioners may be prepared to use efforts to mitigate climate change to protect children from its psychological consequences (Burke et al., 2018). Recognizing a problem's psychological effects may lead to more involvement in the problem and a change in behavior.

Geophysical climate changes significantly affect the social behavior of humans. Social psychology, a discipline rapidly expanding in its influence, helps us understand human behavior in social and cultural contexts, particularly regarding climate change. Social psychology posits that a person's physical environment influences their behaviors, which can be moderated by their social structure (Jhangiani et al., 2022). Anxiety, which is caused by perceived threats to a person's fundamental values and social affiliations (May 1980), has a significant impact on these dynamics. Despite the difficulty of establishing the specifics of the link between climate anxiety and well-being, it is acknowledged as a rational reaction that can lead to positive behavioral changes (Clayton & Karazsia, 2020; Pihkala, 2020).

Assessing social-psychological adaptations to climate change is essential for advocating for effective environmental changes. Terror Management Theory (TMT) offers insights into why these changes in behavior and thought occur. The Terror Management Theory should be incorporated into environmental studies to have a clear understanding of how mortality concerns influence an individual's environmental behavior (Smith et al., 2022). TMT states that "culture reduces the terror engendered by awareness of our vulnerability and mortality by providing a shared symbolic conception of reality that imputes order, predictability, significance, and permanence to our lives" (Greenberg et al., 1986). The theory rests on the idea that people have an inherent self-preservation instinct (Solomon et al., 1991). TMT revolves around three fundamental hypotheses: anxiety buffer, mortality salience, and death-thought accessibility.

Fritsche et al. (2012) and Fritsche & Hafner (2011) applied Terror Management Theory to show how climate change risks and the psychological defenses against mortality shape behavior, resulting in both positive and negative consequences. Wolfe and Tubi (2013) examined how climate change may heighten mortality awareness and influence climate action. Inner challenges like death anxiety can be intercepted by psychological buffers to prevent a negative influence on an individual's well-being (Juhl & Routledge, 2016).

A broad spectrum of acute and chronic mental health problems are associated with climate change's shifting weather patterns and conditions (Cianconi et al., 2020), as well as physical, social, and economic effects and negative emotional responses (Clayton, 2020). These changes make individuals more conscious of the climate crisis, which can affect their mental health. A number of studies link climate anxiety to poor mental health, diminished psychological well-being, and depressive symptoms (Reyes et al., 2021; Wullenkord et al., 2021). According to the Mortality Salience Hypothesis of TMT, environmental hazards can increase mortality awareness, causing individuals to find reinforcement and protection through their psychological structures (Pyszczynski et al., 2015). Building on Terror Management Theory (TMT) research into the connection between mortality salience and the environment, Wolfe and Tubi (2019) developed a conceptual framework for the study of mortality salience, perceptions of climate change, and behavioral responses. According to their findings, teaching individuals about the hazards of climate change may heighten their perception of mortality as well as the actual and perceived defenses that influence their environmental behavior and activities.

The relationship between climate response and Terror Management theory may help lower one's sensitivity to the climate catastrophe or deny its existence, as well as evade or delegate necessary actions (Wolfe & Tubi, 2019). This gives way to a new approach as to how one may evaluate individual and group behavior within climate response and Terror Management theory. Responses to climate change are determined by cultural norms and social identity knowledge, which define collective environmental judgments, ambitions, and behavior (Fritsche et al., 2018).

A central question in climate anxiety research is if it motivates environmentally conscious behavior regarding climate change. The increase in climate change has been accompanied by an increase in environmental activity. Climate anxiety research in the Philippines must adopt a transdisciplinary approach that demonstrates how climate anxiety affects physical and mental health, and influences engagement in sustainable activities (Aruta & Guinto, 2022). Reyes et al., (2021) highlight the significance of exploring climate change mitigation or pro-environmental activities, as well as their relationship with climate change anxiety. Similarly, Aruta & Guinto (2022) advocated for more studies into whether climate anxiety is adaptive (i.e., motivates climate action) or maladaptive (i.e., excessive worry that prevents individuals from taking climate action).

Pro-environmental Behavior consists of actions that cause minimal harm to the environment (Steg & Vlek, 2009) and can be categorized into public actions or private actions (Stern, 2000). Research has established a correlation between climate concern and the likelihood of engaging in pro-environmental behaviors (Reser et al., 2011; Verplanken & Roy, 2013; Verplanken et al., 2020). Responding to climate change in terms of action may be a method to establish control which in turn may improve one's mental health (Veronese et al., 2017; Coppola, 2021; Simon, et al., 2022). Private sphere behavior includes recycling, waste, disposal, energy conservation, consumer choices, modes of transportation, home design decisions, as well as planting, etc. – these are acts that occur in an individual's daily life that have a small direct effect on improving environmental quality (Stern, 2000). When people are made aware of pro-environmental standards and their mortality is threatened, pro-environmental behaviors intensify (Fritsche et al., 2010).

In the public sphere, environmental behavior requires collaborative action that has a significant indirect effect on the environment. Examples of public-sphere environmental behavior include participation in activities such as protests, membership in environmental groups, petition signing, etc. (Stern, 2000). As a result of people's growing concern about the climate catastrophe, people are becoming more inclined to take action (DeAngelo et al., 2016). Apprehension about climate change may fuel environmental advocacy (Verplanken, et al., 2020). Young people are becoming increasingly involved in risk reduction, climate adaptation and mitigation projects, and policy debates. This engagement may lead to feelings of being overwhelmed. Feelings of anxiety, worry, or despair may contribute when advocacy efforts fail to achieve anticipated results (Budziszewska & Jonsson, 2021; Ojala, M., 2021). Numerous eco-emotions like anger, depression, and anxiety have been identified, and each is thought to have a unique role in motivating or discouraging collective action (Shahid, et al., 2021). Besides psychological distress, environmental anxiety has prompted individuals to act on the environment by finding ways to live more sustainably and adopt resiliency.

Climate Anxiety may affect youth differently depending on their exposure to narratives and greater public knowledge of climate change (Maran & Begotti, 2021). Not only has the frequency of mental health problems among children increased in the aftermath of catastrophes, but research suggests that the ramifications for children's mental health are nuanced and multifaceted (Hrabok, et al., 2020). Effective climate communication uses fear or loss to motivate action, but it works best when paired with clear, impactful solutions that assure people their actions will achieve positive environmental results (Von Gal et al., 2024).

The degree to which individuals feel their efforts are making a difference is a crucial factor in determining environmental behaviors (Verplanken & Roy, 2013). Aruta, (2024) identified efficacy as a critical factor in transforming anxiety into constructive action among Filipino youth. The mediating effect of climate anxiety is particularly significant when adolescents express high levels of confidence in the

effectiveness of their actions to address climate change. Understanding pro-environmental norms and acknowledging an existential threat boost individuals' pro-environmental attitude, sustainable behavior, and the frequency of positive environmental actions (Fritsche et al., 2010). Becht, A. I. et al. (2024) discovered that environmental efficacy serves as a moderate link between climate anxiety and public-sphere pro-environmental behaviors. This suggests that for anxious adolescents to partake in more visible and collective actions, they must hold a strong belief in their ability to make a difference. Individual and collective emotions have a significant impact on pro-environmental behaviors (Fritsche et al., 2018). Pertinent in this regard are two forms of efficacy beliefs: self-efficacy and collective efficacy (Bandura, 1997).

According to social cognitive theory, perceived self-efficacy significantly influences attitude. Perceived self-efficacy is an individual's belief in their ability to achieve specific performance levels that can influence a particular event or activity (Bandura, 1997). Self-efficacy is a strong predictor of environmental actions in previous studies (Yoong, et al, 2018). Perceived self-efficacy helps bring in an awareness of the repercussions of one's actions. This makes perceived self-efficacy a crucial element in one's approach to responding to the climate crisis (Clayton, et al. 2017).

Collective efficacy is a shared belief of a group in their ability to plan and execute actions to achieve specific goals (Bandura, 1997). Participation in environmental organizations may foster collective efficacy. Previous studies have established that perceived collective effectiveness promotes private and public-sphere pro-environmental activities far more than self-efficacy (Chen, 2015; Jugert et al., 2016). Bandura (2010) implies that individuals who doubt their group's ability to engage in environmentally friendly behavior will either refrain from attempting to or give up when they encounter difficulties. Collective efficacy may therefore be able to anticipate environmental behavior for the more individuals and organizations feel that everyone can do actions that are helpful to the environment, the more they will participate (Jugert et al, 2016). This suggests that Climate Anxiety is a key predictor of collective behavior, emphasizing the potential of group action as a therapeutic approach for anxiety (Kristoffersen, 2022).

This study is committed to understanding the climate anxiety of Filipinos and fostering the environmental actions necessary to confront the climate crisis. Establishing an extensive view of these psychological notions will help fill out the pervasiveness of climate anxiety research in the Philippines. The psychological repercussions of climate change are becoming increasingly evident, and this study will serve to contribute to the present state of knowledge about how climate anxiety differs by having a non-western perspective. It would contribute to the development of climate initiatives among Filipinos by translating their climate anxiety into environmental behaviors. Specifically, the objectives of the current study are as follows:

1. To examine the relationship between climate anxiety and pro-environmental behaviors among young adult Filipinos
2. To examine the extent of young adult Filipinos' perceived efficacy mediate the association of Climate anxiety and pro-environmental behaviors

The study tests the following hypotheses:

1. Young adult Filipinos with higher climate anxiety are more prone to engage in pro-environmental actions in both private and public settings, compared to those with lower levels of anxiety.
2. Perceived self-efficacy and collective efficacy positively mediate the impact of climate anxiety on both private-sphere and public-sphere pro-environmental behaviors.

# METHODS

To test the proposed hypotheses, quantitative research using survey methods (online questionnaire) was used to obtain optimal numerical results, generalization, and minimal bias (Eyisi, D., 2016). This study examined climate anxiety as the independent variable, its effect on private-sphere and public-sphere pro-environmental behaviors (PEBs) as dependent variables, and the mediating roles of perceived self-efficacy and perceived collective efficacy.

All statistical analyses were performed using IBM SPSS Statistics 27. Initially, means, standard deviations, and intercorrelations of the variables were computed to summarize the study's descriptive statistics and to understand the relationships between climate anxiety, private and public sphere pro-environmental behaviors (PEB), and the two mediator variables: perceived self-efficacy (PSE) and perceived collective efficacy (PCE). Subsequently, the PROCESS macro in SPSS 27 was employed for mediation analyses.

The population of this study consisted of young adult Filipinos. These individuals were Filipino nationals currently residing in the Philippines and are 18 to 30 years of age. In total, data was collected from 320 respondents. Out of the 320, 8 of the respondents were over the age of 30. Therefore, the research sample for the analysis was 312.

**Table 1.** *Distribution of Respondents' Characteristics (N=312)*

| Demographic | Characteristics | *n* | % |
|---|---|---|---|
| Age | 18 years old – 25 years old | 219 | 70.2 |
| | 26 years old – 30 years old | 93 | 29.8 |
| Sex | Male | 150 | 48.1 |
| | Female | 162 | 51.9 |

**Data Gathering Tools**

***Climate Anxiety***

The Climate Change Anxiety Scale (CCAS) (Clayton & Karazsia, 2020) was employed to measure climate anxiety. This scale features four components, each assessed on a five-point Likert scale ranging from "never" (1) to "almost always" (5). The scale was divided into two subscales for assessing climate change anxiety. The CCAS subscales were found to be reliable measures, with $\alpha = 0.96$ and $\alpha = 0.93$ (Clayton & Karazsia, 2020). In this study, the CCAS maintained strong reliability, with a Cronbach's $\alpha = 0.946$, indicating its robust ability to effectively measure climate anxiety.

***Pro-environmental behaviors***

To assess pro-environmental behaviors among young adult Filipinos, two scales were used. Private-sphere pro-environmental behavior was evaluated using Verplanken and Roy's (2013) environmental engagement measure. Participants responded on a five-point scale, ranging from "never" to "always." Items 15 and 16, which pertained to public-sphere behaviors, were excluded. Verplanken and Roy (2013) reported a Cronbach's alpha of 0.84 for their scale, with higher scores indicating more frequent pro-environmental conduct. In this study, the scale demonstrated excellent reliability with a Cronbach's alpha of $\alpha = 0.910$, confirming its effectiveness in measuring private-sphere pro-environmental behaviors.

Hansmann and Binder (2020) created a scale to assess public-sphere pro-environmental behaviors. Their subscale includes five questions that cover both activist and non-activist socio-political actions. Participants reported on these behaviors over the past six months using a five-point scale, ranging from "never" to "always." Hansmann and Binder (2020) found their subscale to be a valid and reliable measure with a Cronbach's alpha of 0.73. In this study, the scale demonstrated good to excellent reliability, with a

Cronbach's alpha of $\alpha = 0.846$, confirming its effectiveness in measuring public-sphere pro-environmental behaviors.

***Perceived Efficacy***

Van Zomeren et al. (2010) developed a scale to measure **perceived efficacy**, encompassing both individual and collective beliefs. **Perceived self-efficacy** was assessed using five items that gauge an individual's perceived capacity to manage the climate crisis. **Perceived collective efficacy** was measured with three questions. Participants rated their agreement with each item on a five-point Likert scale, from "strongly disagree" (1) to "strongly agree" (5).

Van Zomeren et al. (2010) established the validity of their scale, reporting strong reliability with Cronbach's alphas of 0.92 for perceived self-efficacy and 0.94 for perceived collective efficacy. In this study, these scales demonstrated excellent reliability, with Cronbach's alphas of $\alpha = 0.933$ for perceived self-efficacy and $\alpha = 0.952$ for perceived collective efficacy. This confirms that the perceived efficacy scales effectively measure their intended constructs.

**Data Gathering Procedures**

Respondents were enlisted on social media using a social media post summarizing the research that was shared through various active Facebook groups. Advertising and communication using Facebook pages and groups enables Meta to function as an efficient platform for community customer support through a wide range of people (Hanna, 2023). The post stated that the study was on Climate Anxiety, Perceived Efficacy, and Pro-Environmental Behaviors and that respondents needed to be Filipino nationals (currently residing in the Philippines) and 18-30 years old. A link, QR code, contact information, and approval number were displayed in the post.

Prior to beginning the survey, which was generated using Google Forms, the survey started with a letter of informed consent, guaranteeing that participants were thoroughly informed of the study, its prerequisites, and ethical implications. After obtaining consent, participants supplied demographic data such as age, region, and sex. Following the provision of clear instructions and item presentation, the participants proceeded to complete a series of measurements using five-point Likert scales. First, the Climate Change Anxiety Scale was presented on the third page, followed by the evaluation of pro-environmental behaviors in both the public and private spheres on the fourth page. Finally, on the fifth page, perceived self and collective efficacy was displayed.

The research obtained authorization from the ethics committee of St. Louis University Research and Innovations Center (SLU-REC-SS 2022-098) and complied with the Data Privacy Act of the Philippines (RA 10173) “to protect the fundamental human right of privacy of communication while ensuring free flow of information to promote innovation and growth.” Hazards were mitigated through the implementation of offline data storage on secure devices, which were exclusively available to the researcher and supervisor and thereafter destroyed at the completion of use. To achieve pseudonymization, personal identifiers, such as names, were substituted with distinct ID numbers.

## RESULTS AND DISCUSSION

### The Relationship between Climate Anxiety and Pro-Environmental Behaviors among Young Adult Filipinos

Findings indicated that various variables and climate anxiety had strong positive correlations. Climate anxiety indicated a positive correlation with PEB in both the Private and public spheres, suggesting that heightened climate anxiety often leads to increased pro-environmental actions in both personal and public contexts. Moreover, climate anxiety illustrated positive correlations with both perceived self-efficacy and perceived collective efficacy, indicating that individuals with higher levels of climate anxiety believe that they and their communities are capable of administering change for their environment. The findings highlight the complex interactions that exist between psychological factors, such as climate anxiety and perceived efficacy, in influencing one's engagement in environmental actions.

In addition, strong correlations were found in the correlation analysis between the mediator variables Perceived self-efficacy (PSE) and Perceived collective efficacy (PCE) and both public and private pro-environmental behaviors. This emphasizes the critical role of the belief of individuals in their capacities in motivating environmentally conscious behaviors in various scenarios. Furthermore, it highlights the significance of collective beliefs in motivating group efforts necessary to protect the environment. These results provide the importance of the intricate processes that drive the association between perceived efficacy and PEBs. These can be used to develop interventions that are focused on encouraging sustainability individually and collectively.

**Table 2.** *Descriptive Statistics and Pearson Correlations for Study Variables*

| Variable | M | SD | Sex | CA | PEB-Priv | PEB-Pub | PSE | PCE |
|---|---|---|---|---|---|---|---|---|
| Sex | .52 | .500 | | | | | | |
| Climate Anxiety (CA) | 2.94 | .89407 | .083 | | | | | |
| Pro-Environmental Behavior - Private Sphere (PEB-Priv) | 4.10 | .63644 | .078 | .318** | | | | |
| Pro-Environmental Behavior - Public Sphere (PEB-Pub) | 3.15 | .97374 | .037 | .534** | .433** | | | |
| Perceived Self-Efficacy (PSE) | 4.21 | .76158 | .015 | .157** | .510** | .343** | | |
| Perceived Collective Efficacy (PCE) | 4.32 | .80769 | .109 | .134* | .497** | .284** | .632** | |

*Note.* Measured on 5-point Likert scales. *p < .05. **p < .001.
**. Correlation is significant at the 0.01 level (2-tailed)
*. Correlation is significant at the 0.05 level (2-tailed)

The findings suggest that there are significant correlations between climate anxiety and pro-environmental behaviors in the public and private sphere. The correlations are positive, implying that as climate anxiety increases, pro-environmental behaviors tend to increase as well. However, the spread of points on the scattered plot (figure 3) indicates varied responses from the sample, suggesting that not all those with high climate anxiety display pro-environmental behaviors in the private sphere. Therefore, the findings coincide with the hypothesis, indicating that climate anxiety has an impact on the motivation of young adult Filipinos to engage in pro-environmental behaviors in the private and public spheres. Furthermore, there appears to be a significant correlation between pro-environmental behaviors in the private sphere and pro-environmental behaviors in the public sphere, suggesting that individuals engaging in one type of pro-environmental behavior are also likely to be involved in the other.

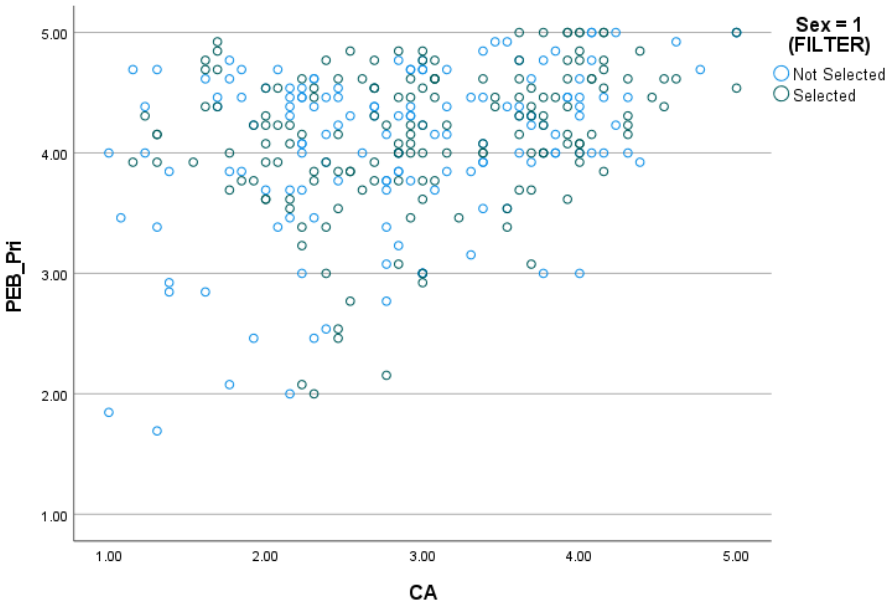


Figure 1. Johnson Neyman Plot on Climate Anxiety x Gender x PEB_Pri

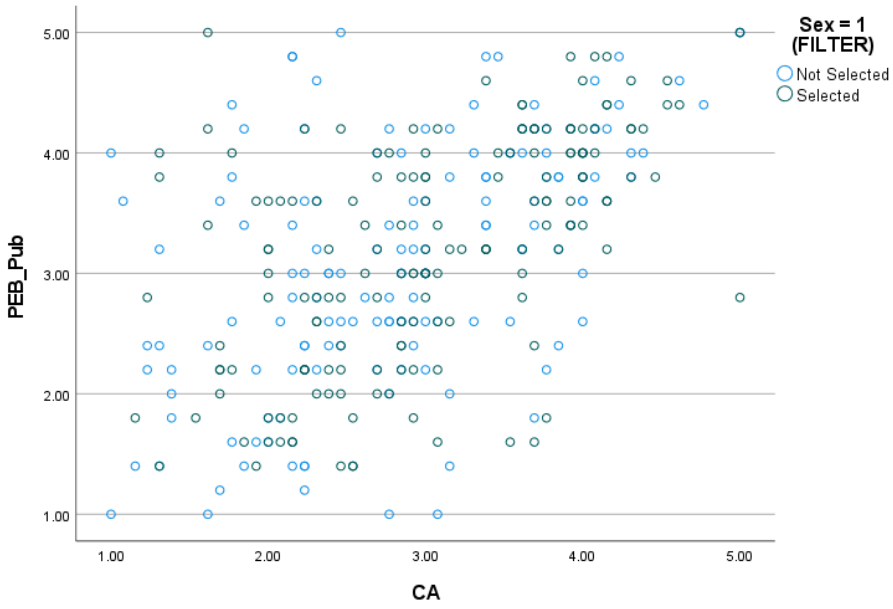


Figure 2. Johnson Neyman Plot on Climate Anxiety x Gender x PEB_Pri

**Effect of Climate Anxiety on Pro-Environmental Behaviors being mediated by Perceived Efficacy**

A mediation analysis was performed in the study to investigate the roles of perceived self-efficacy and collective efficacy on the association between Climate Anxiety and Pro-Environmental Behaviors in both private and public spheres. The PROCESS macro in SPSS 27 was utilized to conduct the analysis, adopting a bootstrap-based strategy to investigate the mediation in a conditional process model (Hayes, 2022). Due to the constraint of the model to apply only one dependent variable, two mediation models were used for each mediator. Climate Anxiety served as the independent variable (IV), while the private or public-sphere PEBs were applied as the dependent variable (DV).

Firstly, the study examined the role of perceived self-efficacy as a mediator. The results of the mediation analysis indicated that Climate Anxiety had statistically significant indirect impacts on both private-sphere and public-sphere PEBs, mediated by perceived self-efficacy. Those who exhibited elevated levels of Climate Anxiety demonstrated a greater perception of their effectiveness in advocating for environmental behaviors. Consequently, this perception resulted in heightened involvement in pro-environmental behaviors within both private and community settings.

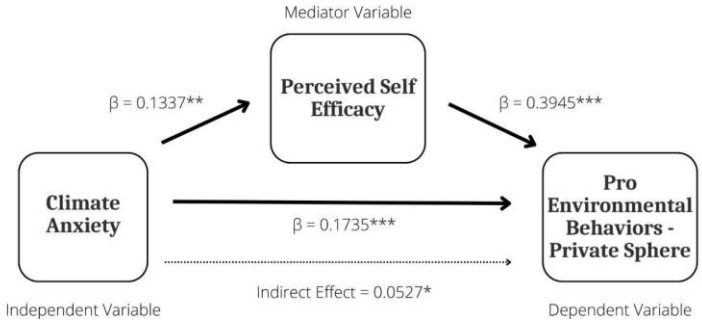


Figure 3. Mediation Path Description on Climate Anxiety (IV) to PEB – Private (DV) with Perceived Self-Efficacy (Mediator)

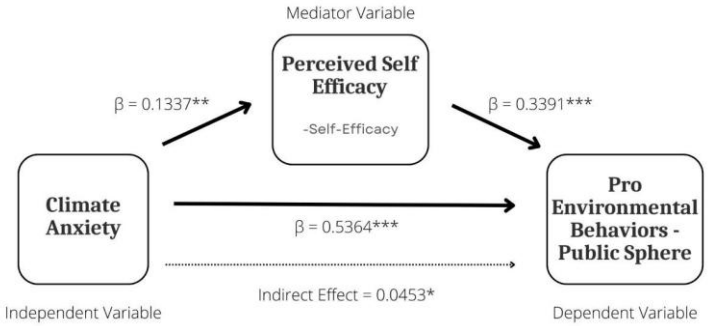


Figure 4. Mediation Path Description on Climate Anxiety (IV) to PEB – Public (DV) with Perceived Self-Efficacy (Mediator)

Additionally, the study investigated the role of perceived collective efficacy as a mediator. The results of the mediation study revealed a marginally significant indirect effect between Climate Anxiety and private sphere PEBs, mediated by perceived collective efficacy. This suggests the presence of a partial mediation effect. Conversely, climate anxiety had a notable indirect effect on the public sphere PEBs and on influencing perceived collective efficacy. This indicates that individuals' perception of collective efficacy played a crucial role in mediating the connection between Climate Anxiety and pro-environmental behaviors in public settings.

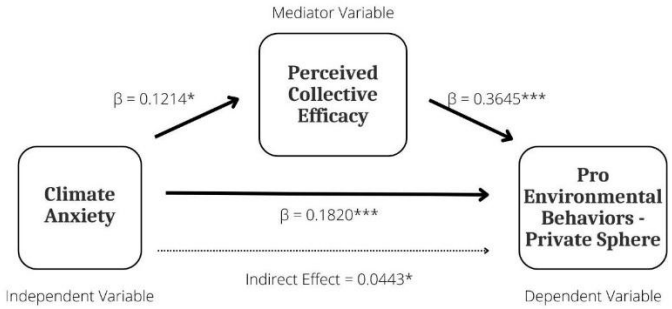


Figure 5. Mediation Path Description on Climate Anxiety (IV) to PEB – Private (DV) with Perceived Collective Efficacy (Mediator)

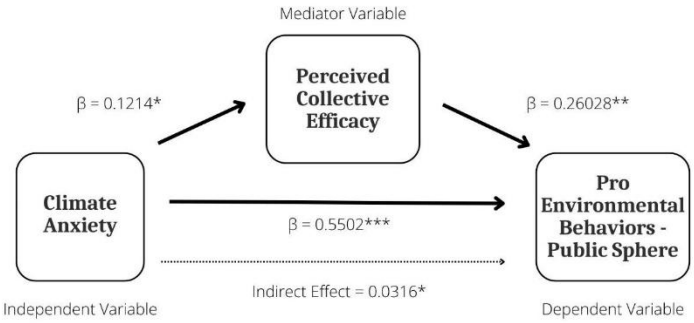


Figure 6. Mediation Path Description on Climate Anxiety (IV) to PEB – Public (DV) with Perceived Collective Efficacy (Mediator)

The results of these mediations underscore the significance of perceived self-efficacy and collective efficacy in comprehending the impact of Climate Anxiety on individuals' involvement in pro-environmental behaviors in various spheres. Therefore, the results of the mediation provide evidence to support hypothesis #3 that the impact of climate anxiety on pro-environmental behaviors in both the private and public spheres is positively mediated by the perceived self-efficacy and perceived collective efficacy of young adult Filipinos.

Enhancing the adoption of pro-environmental behaviors among individuals effectively mitigates the repercussions of climate change as it is acknowledged to be a significant and pressing issue to humanity due to its adverse effects on ecological systems and its influence on social and environmental factors. It is, therefore, imperative to understand the underlying motivations that help drive individuals to engage in environmental behaviors. Climate anxiety, a type of environmental emotion, can effectively amplify pro-environmental behaviors. The study intended to examine the relationship between climate anxiety among young adult Filipinos and their engagement in pro-environmental behaviors in both private and public spheres. To gain an understanding of these relationships, the mediating impacts of perceived self-efficacy and collective efficacy were assessed.

**Climate Anxiety and Pro-Environmental Behaviors**

The initial hypothesis found that young adult Filipinos with higher climate anxiety are more prone to engage in pro-environmental actions in both private and public settings, in contrast to those with lower anxiety levels. The Philippines must engage in effective adaptation and mitigation efforts in order to lower a community's vulnerability and its future losses. The World Bank Group (2022) released a country climate and development report on the Philippines, calling for making social protection programs that are adaptive to climate change, ensuring energy-efficient constructions, improving water storage to reduce risks of floods, and extending irrigation in agricultural practices. These actions would help the Philippines facilitate mitigation efforts globally while also enhancing resilience.

Engaging in pro-environmental behaviors might help individuals cope with their climate change anxiety, potentially easing its impact on their mental well-being. Integrating Terror Management Theory (TMT) reveals that pro-environmental behaviors in various settings can stem from complex intentions rooted in existential concerns. Through TMT, human attitudes and actions are shaped by one's perception of the threats of climate change risks and countermeasures for mortality (Fritsche et al., 2012; Fritsche & Häfner, 2011). Therefore, Psychological safeguards are needed to help mitigate anxiety as one acknowledges mortality and fosters well-being. Wolfe and Tubi (2019) investigated the connection between Terror Management Theory and climate action, focusing on how climate change could heighten awareness of mortality, and how defenses against mortality might either hinder or encourage environmental efforts. In this case, climate anxiety promotes climate action. This assertion is grounded in prior academic research, which posits that climate anxiety is perceived as a rational reaction that leads to beneficial changes in a person's behaviors (Clayton & Karazsia, 2020; Pihkala, 2020). Multiple studies have indicated that maintaining a persistent focus on climate anxiety may serve as a means of participating in environmental

behaviors, therefore alleviating its impacts (Gao et al., 2020; Mathers-Jones & Todd, 2023; Verplanken & Roy, 2013). Being able to recognize the interaction between one's mortality concerns and environmental actions can provide a guide to interventions intended to promote environmental behaviors across various settings (Smith et al., 2022).

Initially, the results indicated a significant and positive association between climate anxiety and environmental behaviors in both private and public spheres. The obtained outcome aligns with prior scholarly investigations that have established a correlation between elevated stress levels and increased behavioral response (Higginbotham et al., 2013; Clayton & Karazsia, 2020). The construct of climate change is multifaceted, for it has the potential to elicit positive emotions and adaptive responses. Integrating the concerns regarding climate change into one's identity facilitates the adoption of a 'green' self-identity, which is an individual's environmental identity in relation to values, beliefs, and behaviors (Verplanken et al., 2020). In their study, Verplanken et al. (2020) found that people's concern for climate change varies. Some individuals see it as unproductive and distressing, while others view it as a constructive response that is fixed to their 'green' self-identity. In the case of this study, climate anxiety was found to be a constructive response. Climate anxiety and ongoing worries about climate change can be beneficial and promote the notion that participating in pro-environmental measures will help mitigate its impact (Verplanken et al., 2020; Baudon & Jachens, 2021).

The study also emphasized the interconnected nature of environmental behaviors across multiple spheres, suggesting that those involved in one form of behavior are also likely to engage in others. The concept of being able to control one's responsibility plays a distinct role in behaviors in the private sphere, which is particularly significant. Pro-environmental behaviors in the private sphere are seen as being under an individual's control, such as preparing for natural disasters, which provides a reinforced feeling of self-efficacy as it provides tangible results for a person (Bandura, 1983). This provides insight into why private sphere behaviors were more common than public sphere ones, as behaviors in the public sphere require participation within the community, making it feel less direct (Gonzales-Riancho et al., 2022).

While sociocultural norms can strongly help motivate private sphere behaviors, public sphere behaviors may be hindered by one's perception of collective action. Individuals may feel less accountable for participating in efforts for the public, particularly if individuals perceive that people in their community are not as committed to pro-environmental initiatives (Maran et al., 2023). This can be seen in Filipino culture, in which *kapwa* (shared identity) is a highlighted communal value.

**Effects of Perceived Efficacy**

The mediation analysis aimed to explore the impact of perceived efficacy among young adult Filipinos as a mediator in the relationship between climate anxiety and pro-environmental behaviors. The findings provide empirical evidence in favor of the proposition that the perception of self-efficacy and collective efficacy play a beneficial mediating role in the relationship between climate anxiety and pro-environmental behaviors, including both private and public spheres.

According to existing research, self-efficacy plays a crucial role in preventing and mitigating climate change anxiety. This study's findings align with prior research, suggesting that knowledge regarding climate change elicits feelings of anxiety, which helps serve as an incentive for individuals to adopt pro-environmental actions by reinforcing their individual and collective self-efficacy (Clayton & Karazsia, 2020; Maran & Begotti, 2021; Innocenti et al., 2023). The findings suggest that a sense of self-efficacy might serve as a motivating factor for young adult Filipinos who are experiencing anxiety related to climate change. This motivation can lead them to engage in practices that can assist in mitigating the negative environmental impacts.

Bandura (1988) emphasizes that an individual's proficiency is key to motivating them to pursue their goals. Therefore, experiencing a strong belief in one's capabilities further enhances one's self-esteem but also operates as a safeguard against stress and vulnerability. The level of individual self-efficacy has a significant influence in the formation and enhancement of collective efficacy.

To successfully encourage PEBs, terror-inducing stimuli must substantially increase perceived efficacy, highlighting its importance in the efficacy of beliefs about anxious emotions (Mah et al., 2020).

For insights into efficacy, the Social Identity Model of Pro-Environmental Action (SIMPEA) by Fritsche et al. (2018) offers a valuable framework. It proposes that factors like ingroup identification, shared norms, collective goals, and collective efficacy shape how individuals perceive environmental problems and participate in environmental actions, both privately and publicly.

Research suggests that this perception can diminish motivation in regard to public sphere behaviors, as they may feel less effective or more reliant on community engagement (Gonzáles-Riancho et al., 2022; Ogunbode et al., 2022). Hence, while collective efficacy encourages action, an individual's perception of their own behaviors may encourage higher involvement in private spheres, indicating a general development when it comes to preparing for disasters and initiatives towards the environment. Research has emphasized that collective efficacy significantly influences individuals' inclination to take action for the environment. There's an association between perceived individual and collective efficacy, norms, and PEB. (Maran et al., 2023).

**Implications**

This study contributes to the present state of knowledge about how climate anxiety, perceived efficacy, and pro-environmental behaviors differs by having a non-Western perspective and to the development of climate initiatives among Filipinos.

Fostering high levels of Perceived Self-Efficacy is crucial for ensuring that adaptive pathways remain dominant, especially among Filipino youth. High PSE encourages engagement in personal behaviors, like disaster preparedness, which are seen as within individual control. Research shows that such problem-focused coping can mitigate distress and restore a sense of control amid global threats (Innocenti et al., 2023). For educators and mental health professionals, effective interventions should focus on building Climate Capability—equipping individuals with skills and resources for action—rather than just addressing anxiety symptoms.

Additionally, leveraging Perceived Collective Efficacy is vital for promoting public-sphere behaviors like activism and volunteering. This emphasizes the need for government and community support for youth-led initiatives, transforming individual distress into collective purpose and reducing feelings of isolation and hopelessness (Von Gal et al., 2024). Policies should facilitate young adults' public actions, reinforcing the belief that collective efforts can effectively manage crises.

Finally, strategic communication must align with the principle of Response Efficacy. Campaigns should couple climate threat awareness with clear solutions that highlight the effectiveness of both individual and collective actions. This ensures that anxiety translates into motivation rather than confusion or withdrawal, reinforcing confidence in self- and collective efficacy.

**Research Limitations**

While this study provides valuable insight with understanding the Mediating Role of Perceived Efficacy in the Relationship of Climate Anxiety and Pro-Environmental Behaviors among Young Adult Filipinos, the study's limitations must be acknowledged. First, a cross-sectional design prevents establishing definitive causal relationships, suggesting climate anxiety drives pro-environmental behaviors (PEBs) via efficacy, but sustained engagement in PEBs may also enhance efficacy beliefs, helping individuals cope with anxiety. Additionally, relying on self-reported measures introduces social desirability bias, potentially inflating reported actions and efficacy beliefs.

Second, while the study confirms a positive mediating role of efficacy, it fails to address the dual pathway described in psychological models of climate anxiety, where anxiety can also diminish self-efficacy. This oversight may miss the complex nature of climate anxiety responses among subgroups. The mediating effect of Perceived Collective Efficacy (PCE) on private-sphere PEBs was only marginally significant, indicating a need for further investigation.

Finally, the narrow sample of young adult Filipinos, while culturally relevant, limits generalizability to older demographics or other cultural contexts. Future research should use longitudinal designs and external behavior measures to validate findings across a broader population.

# CONCLUSION

The study's results offer contributions that are important in understanding the intricacies of the relationship among climate anxiety, pro-environmental behaviors, perceived self-efficacy, and perceived collective efficacy among individuals who are most impacted by climate change, such as young adult Filipinos. The descriptive statistics and correlation analyses revealed significant positive relationships linking climate anxiety to pro-environmental behaviors in both private and public spheres, and to perceived self-efficacy and perceived collective efficacy. The results offer empirical evidence in favor of the assertion that extents of climate anxiety are associated with reinforced engagement with pro-environmental behaviors, with perceived efficacy aiding as a mediating factor in this association.

To better understand the relationship between climate anxiety and pro-environmental behaviors, a mediation analysis was conducted, focusing on the role of perceived efficacy. The relationship between climate anxiety and pro-environmental behaviors in both private and public spheres is influenced by both perceived self and collective efficacy, which was found in the study. These findings underscore the importance of an individual's self and collective efficacy beliefs in fostering pro-environmental behaviors, especially when climate anxiety is present.

Overall, these findings deepen our understanding of the psychological drivers behind environmental engagement, suggesting potential interventions to advance sustainability and alleviate climate change impacts. It appears that by boosting perceived efficacy, climate anxiety can be harnessed as a constructive force for environmental action among young adult Filipinos.

**Recommendations**

To improve the understanding of the relationship between the variables, it is important to analyze cultural variables that could affect an individual's reaction to climate change and their inclination to be involved in environmental initiatives, as well as other possible variables such as climate change experience, coping strategies, psychological well-being, hope, etc.

To make use of psychological support in practice, psychologists and therapists must understand the concerns and formulate strategies that may help effectively address mental health issues associated with climate change. Professionals have a responsibility to adopt the psychological implications of climate change and implement practices for individuals and communities. Psychological support programs that make use of cognitive-behavioral procedures and stress management strategies may be done by psychologists to help those who are facing climate-related concerns such as climate anxiety. Educational programs that focus on the improvement of perceived efficacy beliefs, as well as procedures that specifically focus on climate anxiety help in the adoption of sustainable habits.

To develop efforts in addressing climate-related concerns, it is important to implement public awareness of environmental challenges through campaigns, support for policies focused on mental health and environmental well-being and collaborating with other fields that may help create strategies that help mitigate climate change. Given the important role of collective efficacy, policy interventions should actively support community-based environmental initiatives. These projects serve a dual purpose by addressing environmental goals and alleviating climate anxiety through shared responsibility and community belonging. Making use of the media to highlight successful environmental initiatives and advocacy at the community and national level to help frame climate risks, alongside their solutions, can help prompt behavior change. This will help reinforce Filipino young adults' sense of personal and collective efficacy, validating their belief in communal change.

These recommendations may help enhance our understanding and contribution to developing a society that is more environmentally aware and adept at enduring the impacts of climate change.

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