

## GENERATION Z FACING THE CLIMATE CRISIS: THE LINK BETWEEN SELF-EFFICACY AND CLIMATE CHANGE ANXIETY

Rifdah Shafa Nafilah, Siti Jaro'ah  
Fakultas Psikologi, Universitas Negeri Surabaya  
e-mail: rifdah.22146@mhs.unesa.ac.id

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**Abstract:** *Climate change has become a global issue with not only environmental but also psychological impacts, particularly in the form of climate change anxiety. This anxiety is often experienced by young people, including Generation Z, who are increasingly aware of the threats posed by the climate crisis. On the other hand, self-efficacy is considered an important psychological resource that helps individuals manage stress and challenges. This study aims to examine the relationship between self-efficacy and climate change anxiety among Generation Z. The research employed a quantitative correlational design with 413 respondents selected through accidental sampling. Data were collected using a self-efficacy scale and a climate change anxiety scale, and analyzed through Pearson correlation, and Spearman's rho. The results showed that self-efficacy did not significantly correlate with climate change anxiety ( $p > 0.05$ ), indicating that high or low self-efficacy does not directly affect the level of anxiety about climate change. These findings suggest that climate change anxiety is more strongly influenced by other factors, such as exposure to information, risk perception, or future-oriented distress. The implication of this study is that interventions to address climate change anxiety should not rely solely on strengthening self-efficacy, but also consider enhancing social support, environmental literacy, and positive emotions such as hope.*

**Keywords:** *self-efficacy, climate change anxiety, Generation Z, psychology, environment*

**Abstrak:** *Perubahan iklim telah menjadi isu global yang tidak hanya berdampak pada lingkungan tetapi juga pada aspek psikologis, terutama dalam bentuk climate change anxiety. Kecemasan ini sering dialami oleh generasi muda, termasuk Generasi Z yang semakin sadar akan ancaman yang ditimbulkan oleh krisis iklim. Di sisi lain, self-efficacy dianggap sebagai sumber daya psikologis yang penting dalam membantu individu*

mengelola stres dan tantangan. Studi ini bertujuan untuk mengeksplorasi hubungan antara *self-efficacy* dan *climate change anxiety* di kalangan Generasi Z. Penelitian ini menggunakan desain korelasi kuantitatif dengan 413 responden yang dipilih melalui *accidental sampling*. Data dikumpulkan menggunakan skala *self-efficacy* dan skala *climate change anxiety*, kemudian dianalisis menggunakan korelasi Pearson dan Spearman's rho. Hasil menunjukkan bahwa *self-efficacy* tidak berkorelasi secara signifikan dengan *climate change anxiety* ( $p > 0.05$ ), menunjukkan bahwa tingkat *self-efficacy* yang tinggi atau rendah tidak secara langsung memengaruhi tingkat kecemasan terhadap perubahan iklim. Temuan ini menyarankan bahwa kecemasan perubahan iklim lebih kuat dipengaruhi oleh faktor lain, seperti paparan informasi, persepsi risiko, atau gangguan yang berorientasi pada masa depan. Implikasi dari studi ini adalah bahwa intervensi untuk mengatasi kecemasan perubahan iklim tidak hanya mengandalkan penguatan *self-efficacy*, tetapi juga mempertimbangkan peningkatan dukungan sosial, literasi lingkungan, dan emosi positif seperti harapan.

*Keywords:* Kepercayaan diri, Kecemasan Iklim, Generasi Z, Psikologi, Lingkungan

## INTRODUCTION

Current global climate change shows a significant warming trend and increasingly apparent extreme weather impacts (Valavanidis, n.d.). Data from the World Meteorological Organization 2025 shows that the global average surface temperature in 2024 increased by around 1.55°C above the 1850–1900 average, making 2024 the hottest year on record. This was the first time that the global average temperature exceeded the 1.5°C threshold, the critical limit agreed upon in the Paris Agreement to prevent the worst effects of climate change.

Intergovernmental Panel on Climate Change estimates that around 1 billion people could

be threatened by drought due to global warming, and millions of people, including many children, will be displaced by extreme weather (Semenov, 2024). Another tangible impact related to global climate change is the increase in the frequency and intensity of extreme weather events such as storms, floods, and droughts in various regions of the world (Bolan et al., 2024). In short, the world is experiencing the highest recorded global warming, rising air and sea temperatures, and weather pattern disturbances that are causing various forms of climate disasters. This data underscores the importance of mitigation measures in the coming years.

In addition, data obtained from Suhadi et al., (2023) shows that climate change in Indonesia is currently characterized by a significant upward trend in air temperature, which has led to droughts during the dry season and increased rainfall, which can cause flooding during the rainy season. Data from the Meteorology, Climatology, and Geophysics Agency shows that the national average air temperature in 2024 reached 27.53°C, an increase of about 0.85°C from the normal average (26.7°C for the period 1991-2020), making it the hottest year since records began (Hartanto et al., 2022). This increase in temperature is influenced by increased greenhouse gas emissions and deforestation, which cause global warming and local climate disturbances (Filonchuk et al., 2024).

In addition to rising temperatures, BMKG predicts that Indonesia will experience a wet dry season until October 2025, which will show extreme dynamics with increased frequency of local storms, heavy rains accompanied by strong winds, floods, fallen trees, and landslides, which will occur in several areas in Indonesia (BMKG, 2025). The analysis BMKG 2025 also notes that in June 2025, most of Indonesia will still be in the rainy season even though climatologically the dry season should have

already begun. This is due to above-normal rainfall conditions during April to May 2025, which should have marked the transition from the rainy season to the dry season.

The current climate crisis not only affects the physical environment, but also the psychological well-being of communities that are potentially targeted by the climate crisis (Maslin et al., 2025). A report from the Intergovernmental Panel on Climate Change 2022 states that the consequences of climate change are becoming increasingly apparent through extreme temperature increases, flooding, forest fires, and ecosystem damage. As a result of the current crisis, the term “climate change anxiety” has emerged, referring to the emergence of fear, anxiety, and helplessness due to awareness of the ongoing impacts of climate change (Clayton, 2020). UNICEF 2024 states that more than one billion children are currently at high risk from climate and environmental crises, the consequences of which can impact children's health and well-being.

An international survey conducted by Hickman et al., (2021) found that 10,000 young people (aged 16–25) in 10 countries reported that around 59% were very concerned about climate change, and 45% admitted that climate-related anxiety even affected their daily lives. About 75% of

respondents described the future as “scary” and 83% believed that adults had failed to save the planet. This is supported by an article by Yuan & Toweh, (2025) which states that there has been a 4,590% surge in Google searches for the topic “Climate Anxiety” between 2018 and 2023. This indicates the emergence of anxiety caused by increasingly extreme climate change. A survey by Shorey et al., (2022) estimates that around 25.2% of teenagers plan to delay or cancel their desire to have children due to environmental concerns. Furthermore, a survey conducted in Indonesia by Indikator Politik Indonesia together with Yayasan Indonesia CeraH in 2021 stated that Gen Z has a high level of awareness of the climate crisis, followed by special attention to environmental damage, pollution, and waste management issues. The results of the study Jaro'ah et al., (2023) also mention that individuals aged 15-29 years old feel curious when thinking about climate change, in other words, they are curious about this phenomenon.

One psychological aspect that can overcome anxiety, which can disrupt motivation and consistency in individuals, is self-efficacy (Schunk & DiBenedetto, 2021). Albert Bandura wrote that self-efficacy is an individual's belief in their ability to organize

and carry out actions to achieve goals. Bandura's social cognitive theory states that self-efficacy is a determining factor that influences every aspect (cognitive, affective, and behavioral) (Waddington, 2023). Warner & Schwarzer, (2020) shows that individuals with high levels of self-efficacy tend to experience less environmental distress because they have good coping strategies. This is also evidenced by research results in several settings (student presentations, thesis completion, and exams) which show consistent results that there is a negative relationship between self-efficacy and anxiety levels, meaning that the higher the level of efficacy in individuals, the lower their anxiety levels (Zareva, 2024). Individuals with high self-efficacy are more likely to see challenges as surmountable and remain motivated to act even in difficult circumstances. In a more specific study on climate ownership Octavio & Wicaksono, (2025), it was found that media exposure to climate issues and self-efficacy showed that self-efficacy had a significant effect in reducing eco-anxiety levels among Gen Z, but media exposure to climate change still had an indirect contribution to the self-efficacy variable. In the issue of climate change, self-efficacy should play a role as a protective mechanism against anxiety,

enabling individuals to remain motivated and consistent in contributing to addressing climate change.

However, to date, there has been little research specifically measuring the relationship between self-efficacy and climate change anxiety among Gen Z, especially in this era of intense social media use, which has led to greater exposure to environmental crisis issues. This is reinforced by the results of a study Jaro'ah et al., (2023b) which shows that higher social media use has a significant effect on increasing the emergence of climate anxiety in individuals entering adulthood. This statement raises the question for the author: can self-efficacy serve as a psychological buffer in facing the emotional pressure of climate change among Gen Z? The hypothesis of this study is that there is a relationship between self-efficacy and climate change anxiety among Generation Z. This research is important because it can provide empirical insights into the role of self-efficacy in mitigating the negative effects of climate anxiety, especially among adolescents and young adults. The findings are expected to form the basis for the design of psychological interventions, environmental education, or capacity-building programs for young people that are

more contextual, solution-oriented, and maintain mental health amid the global climate crisis.

## RESEARCH METHODS

This study uses a quantitative type with a correlational approach, which aims to determine the relationship between self-efficacy and climate change anxiety in Generation Z. The population in this study was selected based on the criteria of being Generation Z individuals aged 13-28 years old who are interested in environmental issues. The sampling technique used was accidental sampling through the distribution of online questionnaires on social media. The exact population size for this study is unknown because there is no definitive data or figures on the number of Generation Z individuals, so the author cannot include this information. Therefore, the method used to determine the number of samples needed for this study was the Lemeshow formula. The results obtained using the Lemeshow formula and a margin of error of 5% yielded a minimum of 385 respondents. The number of respondents obtained at the time of data collection was 417. In this study, two scales were used in an online questionnaire via Google Forms as a medium for collecting data. The data collected in Google Forms included: (1) informed consent, (2)

respondent demographics, (3) self-efficacy scale measurements, and (4) climate change anxiety scale measurements. The questionnaire was distributed through several social media platforms, such as WhatsApp, Instagram, and Telegram. The instruments in this study used two types of scales, namely a scale to measure the self-efficacy variable and a scale to measure the climate change anxiety variable. For the self-efficacy variable, the author used the General Self-Efficacy Scale (GSES) with Cronbach's alpha reliability ranging from 0.75 to 0.91. This scale consists of 10 items using a 1-5 Likert scale as the answer options. This item contains questions such as “*Saya dapat selalu menyelesaikan masalah yang sulit jika saya berusaha keras*” “*Saya mampu mencari cara untuk menyelesaikan masalah jika ada sesuatu yang menghambat tujuan saya*” and so on. Meanwhile, for the climate change anxiety scale, the author uses the Climate Anxiety Scale (CAS) with a Cronbach's alpha reliability of 0.91. This scale consists of 10 items with Likert 1-5 as the answer options.

These items contain questions such as “*Memikirkan iklim membuat saya susah tidur*” and so on. Data analysis in this study used Pearson product moment correlation to determine the relationship between self-efficacy and climate change anxiety among Gen Z. All analyses in this study were conducted using JASP 0.18.1 software.

## RESULTS AND DISCUSSION

### RESULTS

#### **Respondents Demographic Characteristic**

Based on demographic data, the total number of respondents in this study after outliers were removed was 413 people. In terms of age, the majority of respondents were in the 18–21 age range, with a percentage of 77.6%. The most common age was 18 years old (31.7%), followed by 21 years old (19.1%) and 19 years old (16.7%). This shows that most respondents were from the late adolescence to early adulthood age group, who psychosocially were in a transitional stage of development towards adulthood.

**Table 1. Frequencies for Age**

| <b>Age</b> | <b>Frequency</b> | <b>Percent</b> |
|------------|------------------|----------------|
| 17         | 12               | 2.906          |
| 18         | 131              | 31.719         |
| 19         | 69               | 16.707         |
| 20         | 42               | 10.169         |
| 21         | 79               | 19.128         |
| 22         | 51               | 12.349         |
| 23         | 19               | 4.600          |
| 24         | 8                | 1.937          |
| 25         | 1                | 0.242          |
| 26         | 1                | 0.242          |
| Missing    | 0                | 0.000          |
| Total      | 413              | 100.000        |

When viewed by gender, the majority of respondents were female, numbering 332 people (80.4%), while male respondents numbered 81 people (19.6%). This composition indicates that the study represents the female perspective more than the male perspective.

Overall, the profile of respondents in this study shows a predominance of young people and women. This may indicate that the perceptions of self-efficacy and climate change anxiety found in this study are more influenced by the characteristics of this demographic group.

This study aims to explain whether or not self-efficacy has an effect on climate change anxiety among Generation Z. However, first, the descriptive statistics for each variable, namely self-efficacy and climate change anxiety among Gen Z, will be presented. By understanding the general trends in the data, the researchers will compare them with the results of inferential tests to see whether Gen Z in this study tends to have high or low levels of self-efficacy and to see the levels of anxiety related to climate change, which can be mild, moderate, or severe.

**Table 2. Frequencies for Gender**

| <b>Gender</b> | <b>Frequency</b> | <b>Percent</b> |
|---------------|------------------|----------------|
| Laki – Laki   | 81               | 19.613         |
| Perempuan     | 332              | 80.387         |
| Missing       | 0                | 0.000          |
| Total         | 413              | 100.000        |

The analysis results show that Generation Z in this study has an average self-efficacy of 38.835 on a scale of 23-50. Based on the mean score, the respondents' self-efficacy level is quite high with a relatively even distribution of data, as indicated by a standard deviation of 5.920. The data distribution also tends to be symmetrical (skewness = -0.053) and slightly dispersed (kurtosis = -0.598), which means that most respondents have similar levels of self-efficacy without any extreme differences. From these results, it can be concluded that in this study, Gen Z has a good level of self-efficacy in facing challenges.

The level of climate change anxiety among Generation Z shows an average of 32.274

with a score range between 13-61. This mean score indicates that anxiety about climate change is in the moderate category, but with a fairly high standard deviation of 11.347, meaning that there is significant variation among respondents, or significant differences in responses or reactions among each individual respondent. The data distribution results show that the data is slightly skewed to the right (skewness = 0.394), meaning that the majority of respondents have low to moderate levels of anxiety, although there is a small proportion of respondents who experience very high anxiety. Based on this analysis, the climate change anxiety variable shows quite diverse results in terms of its level.

**Table 3. Descriptive Statistics**

|     | Valid | Mean   | Std. Dev. | Min.   | Max.   |
|-----|-------|--------|-----------|--------|--------|
| SE  | 413   | 38.835 | 5.920     | 23.000 | 50.000 |
| CCA | 413   | 32.274 | 11.347    | 13.000 | 61.000 |

SE: Self Efficacy

CCA: Climate Change Anxiety

**Tabel 4. Assumption checks**

**Shapiro-Wilk Test for Multivariate Normality**

| Shapiro-Wilk | p     |
|--------------|-------|
| 0.994        | 0.079 |

In addition, multivariate normality testing using Shapiro-Wilk produced a significance value of 0.079 ( $p > 0.05$ ), which means that the data meets the assumption of normal

distribution. This confirms that the correlation analysis used can be applied appropriately.

**Tabel 5. Correlation Table**

| Variable |                | X     | Y |
|----------|----------------|-------|---|
| SE (X)   | Pearson's r    | —     | — |
|          | p-value        | —     | — |
|          | Spearman's rho | —     | — |
|          | p-value        | —     | — |
| CCA (Y)  | Pearson's r    | 0.084 | — |
|          | p-value        | 0.089 | — |
|          | Spearman's rho | 0.067 | — |
|          | p-value        | 0.175 | — |

Based on the results of Pearson's correlation analysis, a correlation coefficient of 0.084 was obtained with a significance value of 0.089 ( $p > 0.05$ ). This shows that there is no significant relationship between self-efficacy and climate change anxiety. The results of Spearman's rho correlation test also support

### Discussion

The initial hypothesis in this study was that there is a relationship between self-efficacy and climate change anxiety in Generation Z. However, this hypothesis was rejected because the statistical analysis showed that the relationship between the two variables was not significant. The results of

this finding, with a coefficient value of 0.067 and a significance value of 0.175 ( $p > 0.05$ ). Thus, it can be concluded that an individual's level of self-efficacy is not directly related to the level of anxiety felt regarding climate change.

additional correlation analysis also showed a similar pattern, further reinforcing that there is no significant relationship between self-efficacy and climate change anxiety.

The results of this study are in line with the findings of Wullenkord et al., (2024) which show that not all psychological factors, including self-efficacy, have a significant

effect on climate change anxiety. The study found that although climate risk perception and political orientation are related to climate anxiety, other variables such as self-efficacy and nature connectedness do not have a significant effect. In line with this, the results of this study also show that the variables tested do not have a significant effect, thus reinforcing the view that climate change anxiety is a complex phenomenon and is not always influenced by certain individual factors. In addition, the issue of climate change is global and systemic, so individuals may feel that their personal abilities are insufficient to overcome this threat. This is in line with the findings of Pihkala, (2020), who explained that eco-anxiety often arises alongside difficult feelings such as sadness, guilt, anger, and despair.

The insignificant results obtained in this study can also be reviewed from the descriptive results, which show that Generation Z in this study generally has a high level of self-efficacy. The data also indicate that most respondents have a fairly similar level of self-confidence without extreme differences between individuals. This shows that self-efficacy among Generation Z tends to be homogeneous. This condition suggests that the self-

efficacy variable lacks sufficient diversity to explain the differences in anxiety levels that arise among Generation Z respondents. Meanwhile, for the results on the climate change anxiety variable, the findings indicate a relatively high level of anxiety among Generation Z, ranging from low to very high. Although most respondents fall into the low to moderate anxiety category, there are also a few who experience severe anxiety. The significant difference in climate change anxiety levels cannot be fully explained by self-efficacy, which is relatively uniform. This gap is one of the reasons why the test results show that self-efficacy does not have a significant effect on climate change anxiety.

From another perspective, Generation Z is known to be highly connected to information, including global issues such as the climate crisis. Although Generation Z has high self-efficacy or confidence in facing challenges, constant exposure to information about the impacts of climate change can trigger anxiety. Generation Z is a group that is highly connected to the global flow of information, including issues related to the climate crisis. Although Generation Z's level of self-efficacy is relatively high, this self-confidence does not necessarily reduce the climate anxiety

they feel. Futó & Karcagi-Kováts, (2024) stated that Generation Z is highly vulnerable to climate anxiety due to constant exposure to distressing information about environmental issues. Maran & Begotti, (2021) also explained that the media plays a role in this dynamic, as the intensity of exposure to climate-related content is associated with increased anxiety, even though it can be beneficial in other ways. They also added that self-efficacy can coexist with climate anxiety, so individuals with high levels of self-efficacy still have the potential to experience climate change anxiety. This is reinforced by Ding, (2024), who explained that although self-efficacy can motivate individuals to take action, it does not protect them from the emotional burden that arises from information about climate change. Thus, the high level of self-efficacy among Generation Z in this study did not contribute to a decrease in climate anxiety because external factors in the form of information exposure were more dominant in shaping their emotional responses.

In addition to the factor of information exposure, the results of this study can also be explained by the findings of a study by Geiger et al., (2021), which highlight the role of anticipatory emotions in predicting

individuals' propensity to take climate action. In their research, found that hope and boredom influence the intention to take climate action. From these findings, it can be concluded that climate change anxiety may not only emphasize the aspect of individual ability or self-efficacy, but also specific emotional conditions that accompany thoughts about climate action. Strengthening hope can be a more effective strategy for reducing anxiety while increasing environmental action intentions among the younger generation. In other words, even if individuals have good self-efficacy, this ability may not automatically encourage action; in fact, it often weakens action intentions if it is not accompanied by optimism and hope.

Other factors can also be seen from the results of a study by Stanley, (2023) which shows that individuals with anticipatory solastalgia, or an attitude of anticipation toward future environmental damage, have high expectations that climate change will have a more significant impact on their living environment. In addition, it was also found that there is a more intense emergence of negative emotions about climate change among individuals with anticipatory solastalgia. This may explain why some respondents in this study had

high levels of climate change anxiety and fairly good self-efficacy. In other words, it can be said that self-efficacy is not always sufficient to suppress anxiety if individuals have already experienced future-oriented distress. Therefore, anticipatory solastalgia may also be an external factor that contributes to climate anxiety.

## CONCLUSION AND SUGGESTIONS

### Conclusion

Based on the results of research on the relationship between self-efficacy and climate change anxiety in Generation Z, which consisted of 413 respondents, several conclusions can be drawn. First, the results of the Pearson and Spearman correlation tests show that there is no significant relationship between self-efficacy and climate change anxiety. The Pearson correlation value of 0.084 ( $p = 0.089$ ) and the Spearman correlation value of 0.067 ( $p = 0.175$ ) both indicate  $p > 0.05$ . This means that an individual's level of confidence in their abilities (self-efficacy) does not directly affect their level of anxiety related to climate change.

Second, the statistical description shows that the respondents' self-efficacy tends to be in the high and relatively homogeneous category, while climate change anxiety has

more diverse variations. These analysis results can explain why the influence of self-efficacy on climate change anxiety does not appear to be significant, because differences in climate anxiety levels are more likely to be influenced by factors other than individual self-efficacy.

Third, the results of this study are in line with several previous studies which state that climate anxiety is more influenced by external factors, such as exposure to information about the climate crisis. In fact, a recent study by Stanley, (2023) explains that climate distress can arise from anticipatory solastalgia, which is current anxiety triggered by the prospect of future environmental change. Meanwhile, Geiger et al., (2021) emphasizes that emotions such as hope and boredom play a greater role in driving climate action intentions. Thus, this study enriches the literature that self-efficacy is not the main predictor of climate anxiety, but only one of many factors that may be involved.

Furthermore, there are limitations to the results of this study. First, the sampling method used accidental sampling through the distribution of online questionnaires, resulting in an uneven distribution of respondents that was not representative of the entire Generation Z population in

Indonesia. Second, the composition of respondents was dominated by women (80.4%), so the results of the study represented the experiences of women more than those of men. Third, the research variables were limited to covering only the relationship between self-efficacy and climate change anxiety, thus failing to explore other factors that may be more relevant, such as social support, connection with nature, future orientation, or specific emotions such as hope and despair.

### **Suggestion**

Based on the findings of this study, several recommendations can be proposed for future research and practical applications. For future research, it is suggested to employ a more representative sampling method that considers the balance of gender, age, and regional distribution of respondents. This approach is expected to produce results that are more generalizable and reflective of the broader characteristics of Generation Z.

Future studies are also encouraged to include additional potential variables, such as social support, climate literacy, future orientation, and direct experience with natural disasters. These variables are expected to have a stronger influence on climate change anxiety than self-efficacy

alone, and their inclusion may provide a more comprehensive understanding of the factors contributing to emotional responses toward climate change.

In addition, researchers are advised to adopt a mixed-methods approach by combining quantitative methods with qualitative techniques such as interviews or focus group discussions (FGDs). This methodological integration will allow a deeper exploration of participants' psychological dynamics, offering richer insights and more nuanced interpretations of the findings.

From a practical standpoint, the results of this study suggest that interventions aimed at reducing climate change anxiety should not focus solely on enhancing self-efficacy. Instead, such interventions need to emphasize strengthening hope, developing emotional regulation skills, and fostering social and community-based support systems. These components are essential in helping individuals build resilience in the face of environmental uncertainty.

Furthermore, climate education provided by educational institutions and mass media should place greater emphasis on solution-oriented messages and opportunities for collective action. By focusing on practical steps and collective empowerment, the

younger generation can develop a stronger sense of control and optimism about the future, thereby reducing the psychological

burden associated with the ongoing climate crisis.

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