

# **Climate Change Content on Instagram and Eco-Anxiety in Young People: The Role of Agency**

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### **Abstract**

Thanks to the rise of social media platforms like Instagram, voices of young people like climate activist Greta Thunberg can become more prominent. The accessibility and magnitude of Instagram to young people may influence their level of eco-anxiety. Eco-anxiety is defined in this research as the fear, worry and distress that is experienced in response to the existential threat of climate change and other environmental problems. A sense of agency could also influence the level of eco-anxiety in young people. Thus, this study will try to answer how interaction with climate change content on Instagram influences the level of eco-anxiety in young people (aged 18-35), and what role agency plays in this relationship. A quantitative online survey revealed that both passive and active interactions with climate content on Instagram increased eco-anxiety, with active interaction having a bigger effect. However, sense of agency did not significantly influence eco-anxiety or moderate the relationship between Instagram interaction and eco-anxiety. The findings highlight the emotional effects of climate change content on Instagram users, contributing to the understanding of social media's impact on climate change perceptions and well-being among young people.

*Keywords:* Instagram, social media, eco-anxiety, climate change, agency, passive interaction, active interaction, climate change content

## **Introduction**

When Greta Thunberg started her protest against climate change in front of the Swedish parliament it did not take long for it to go viral on social media (Crouch, 2018). Since then, her climate activism has found a wide audience among children, adolescents, and young adults on social media (Molder et al., 2022). Greta has been using social media and her platform to speak up about climate change and the threat it forms to our world (Molder et al., 2022). She has much common ground with younger people, they identify with her because she is a peer. These young people also connect with Greta because they are more aware of the climate change problem compared to other generations (Dodds, 2021; Lawrance et al., 2022; Tyson et al., 2021). This massive support shows that young people recognize the seriousness of this matter, and that action needs to be taken.

The climate change crisis is a big and ongoing world problem. Climate change is seen as a major threat by people in countries across North America, Europe, and the Asia-Pacific region (Poushter et al., 2022). This problem cannot be easily solved, which is why the climate change crisis might provoke negative feelings among people. Children, adolescents, and young adults are particularly susceptible to experiencing negative feelings about climate change (Fritze et al., 2008). Social media users that are part of Gen Z and millennials are found to be more likely to interact with content about climate change on social media than older generations (Thigpen & Tyson, 2021). These younger generations also are more likely to express emotions when they see climate change content on social media, including anger and anxiety about the future (Thigpen & Tyson, 2021)

This group of young people will eventually be living through the consequences of climate change, which means they might be more inclined than adults or older people to have negative

emotions about the climate change problem (Fritze et al., 2008; Wu et al., 2020). Negative feelings such as worry, distress (Searle & Gow, 2010), anger (Stanley et al., 2021) or a diminished feeling of control (Pihkala, 2020), can result in a feeling of anxiety about climate change. This feeling of anxiety about climate change is known in research as climate anxiety or eco-anxiety. Eco-anxiety is the feeling of fear and worry that people experience about the climate change crisis (Hogg et al., 2021).

Since the threat of the climate change crisis is so big and intangible (Dodds, 2021), young people do not necessarily know what they can do when it comes to acting on climate change (Corner et al., 2015). They feel less able to act against this problem (Lawrance et al., 2022). Furthermore, this lack of agency is often combined with these young people feeling that they are less convinced that their actions would be effective in resolving or decreasing the climate change problem (Lawrance et al., 2022). Agency might therefore play a role in the level of eco-anxiety young people experience about climate change.

Information about climate change is more accessible and easily spread with the rise of social media platforms like X (formerly known as Twitter), Facebook and Instagram in recent years. As news outlets, politicians, influencers and peers have been using social media to share current events and news, these platforms have transformed from being used for forming and maintaining interpersonal connections to being used as information source, discussion platform or entertainment source (Gonzalez et al., 2023).

Media exposure to climate change content has been found by Maran and Begotti (2021) to be one of the main factors that influences eco-anxiety. According to Marcella-Hood and Marcella (2023) people use Instagram as a platform to obtain news and information about current situations. Instagram is among one of the most used social media platforms for adolescents

(Khoros, 2024). Furthermore, young people prefer social media to obtain information related to climate change (Wu et al., 2023).

The literature largely neglects young people's preferred social media platforms, such as Instagram, and overlooks their perspectives on climate change (Parry et al., 2022). With about 60% of Instagram users in 2023 consisting of people between 18 and 34 years old (Khoros, 2024), Instagram is an important source of information for young people. However, it does have negative effects on mental well-being, with the social media platform causing worry and anxiety among its users (Macmillan, 2017). Therefore, researching climate change content on Instagram and its effects on eco-anxiety could enhance the understanding of young people's experiences and emotions about climate change.

Thus, in this thesis the question *“How does interaction with climate change content on Instagram influence the level of eco-anxiety in young people, and what is the role of agency in this relationship?”* will be researched. First, the main variables, eco-anxiety, climate change content and Instagram and agency will be further elaborated on in the theoretical framework. Hypotheses will be formed based on expectations gathered from the existing literature. In the method section the procedure, measures and design of the research will be described. This will be followed by the results section where the findings will be described, and finally the research question will be answered through the discussion of the findings, limitations, and practical implications of this research in the discussion section.

## **Theoretical Framework**

### **Eco-anxiety**

People like scientists, journalists, activists, or student are often most up to date on the current threat of climate change and experience a heightened sense of fear about the climate

crisis (Dodds, 2021). A heightened sense of fear, or anxiety, about the climate crisis is also called climate anxiety or eco-anxiety (Dodds, 2021). Hogg et al. (2021) argue that eco-anxiety measures more than just anxiety about climate change, but that it also encompasses anxiety for other environmental problems such as global warming or pollution. Therefore ‘eco-anxiety’ is defined as the emotional and mental distress someone may experience as a response to the enduring threat of climate change and worldwide environmental problems (Coffey et al., 2021; Hogg et al., 2021). Hogg et al. (2021) also argued that eco-anxiety can be seen as a rational reaction to the enormous scale of this ecological threat humanity and the planet are facing.

Through the media people are frequently indirectly exposed to information on climate change, this can cause psychological distress from awareness and fear of the threat of climate change (Hogg et al., 2021). In research by Parry et al. (2022) young people reported that they had a higher level of eco-anxiety after seeing content about climate change on digital and social media. For young people, the impact of the realization that climate change is an enduring existential threat can be considerable to their mental health (Lawrance et al., 2022). These young people are more likely to feel the emotional and psychological effects of eco-anxiety because they are still developing and are vulnerable to these negative feelings (Wu et al., 2020). Thus, extensive media coverage on climate change may also influence young people’s level of eco-anxiety. Studies have found that exposure to climate change content in the media is related to experiencing eco-anxiety among young people (Loll et al., 2023; Maran & Begotti, 2021; Shao & Yu, 2023).

### **Climate change content, Instagram and eco-anxiety**

Social media are being used for a lot of different purposes, including as an information source (Corner et al., 2015), for activism (Molder et al., 2022), for social connections (Mackson et al.,

2019) or for environmental communication (Pavelle & Wilkinson, 2020). Social media platforms have become an important information source on climate change among young people (Corner et al., 2015). These young people indicated that several times per week they were exposed to information about climate change (Maran & Begotti, 2021). Previous studies found that a higher amount of exposure to climate change content led to a higher level of eco-anxiety (Loll et al., 2023; Maran & Begotti, 2021; Shao & Yu, 2023) and distress about climate change among young people (Lawrance et al., 2022).

That more exposure to climate change content leads to more eco-anxiety is not surprising. As a lot of climate change content in social media is highlighted by a negative narrative and politicians, media outlets, influencers and other influential organizations show the detrimental consequences of the climate change crisis in their shared content (Maran & Begotti, 2021; Molder et al., 2022). Social media networks perpetuate this type of framing (Maran & Begotti, 2021) because this type of content is spread through personal social networks and large social media platforms, which increases negative emotions such as fear, distress and anxiety (Li & Zhong, 2021).

More social media users are accessing visual platforms for climate information, platforms like Instagram (Molder et al., 2022). Loll et al. (2023) reported that media that depicted climate change through video content had the largest effect on feelings of eco-anxiety compared to more traditional media such as newspapers and radio. A platform that consists mostly of visuals is Instagram, and visuals are an effective way to communicate about climate change online (Parry et al., 2022; van der Linden et al., 2014). Furthermore, Instagram is one of the most used social media platforms by young people (Parry et al., 2022), with 2 billion Instagram users worldwide and 60% of these users being between 18 and 35 years old (Khoros, 2024).

Moreover, Instagram is an interactive platform where users can interact with content through scrolling, liking, commenting, sharing content or posting content themselves (Gonzalez et al., 2023). Young people between 18 and 35 years old grew up with social media, so they would be generally highly skilled when it comes to interacting with content on Instagram and social media. Climate change content on social media can induce negative emotions, with worry and anxiety being the most common (Maran & Begotti, 2021), which might elicit eco-anxiety.

Hence, more interaction with climate content on Instagram could lead to a higher level of eco-anxiety among young people, since most content about climate change on social media underlines the climate change threat and negative environmental consequences (Maran & Begotti, 2021; Molder et al., 2022). Therefore, it would be interesting to investigate if more interaction with this negative climate content on a highly visual platform such as Instagram will lead to a higher level of eco-anxiety amongst young people.

### **Climate change and agency**

When it comes to acting on climate change young people do not necessarily know what they can do (Corner et al., 2015), since the threat of the climate change crisis is so big and intangible (Dodds, 2021). They feel less capable and responsible in acting against this problem (Lawrance et al., 2022). Furthermore, they also feel less convinced that their actions would be effective in resolving or decreasing the climate change problem (Lawrance et al., 2022).

Lawrance et al. (2022) researched the climate change crisis and young people's emotional responses, particularly eco-anxiety, and feelings of agency in relation to it. The definition of climate agency in the study was built from a combination of efficacy and responsibility regarding the climate change problem, as supported by Toivonen (2022) who argued that agency is more than just the feeling of control over your actions. Lawrance et al.

(2022) measured climate agency through feelings of control young people felt they had over their actions and how effective young people thought these actions would be and their ability to respond to the climate change crisis (Lawrance et al., 2022).

People who are frequently exposed to climate change information are more likely to feel less efficacy about the climate change crisis (Kellstedt et al., 2008). In the study of Hornsey et al. (2015) people reported more efficacy when they were confronted with climate change content that contained a high-threat, or a negatively framed message than people who were confronted with climate change content containing a less threatening message. Consequently, Helferich et al. (2020) found that content about climate change from a source like social media can decrease efficacy and increase climate anxiety. Contradicting results were reported by Lawrance et al. (2022), it was found that the more distressed (anxious) young people were about climate change, the more likely they were to have a higher sense of agency.

Hence, young people feel a lower sense of agency, they feel less capable, responsible and like their actions would be effective when it comes to having an impact on the climate crisis. This lower sense of agency may cause them to feel more negative feelings, like anxiety, about facing the climate change problem, which could result in a higher level of eco-anxiety. Furthermore, since Instagram contains a lot of negatively framed climate change content this may impact the sense of agency young people experience.

Additionally, agency could also possibly moderate the relationship between interaction with climate change content on social media, in this thesis Instagram specifically, and the level of eco-anxiety young people experience. Since there have been contrasting results reported in previous research concerning the role of agency in exposure to climate content and its influence

on eco-anxiety experienced by young people. This moderating role would be an interesting direction to investigate.

Based on the theoretical framework outlined above, the following hypotheses are posited:

*H1:* Interaction with climate change content on Instagram positively influences the level of eco-anxiety young people experience, such that higher amounts of interaction lead to higher levels of eco-anxiety.

*H2:* Interaction with climate change content on Instagram negatively influences the sense of agency in young people, such that high amounts of interaction lead to lower levels of agency.

*H3:* A sense of agency will negatively influence the level of eco-anxiety young people experience, such that lower levels of agency lead to higher levels of eco-anxiety.

*H4:* Agency will negatively moderate the relationship between interaction with climate change content on Instagram and its influence on the level of eco-anxiety young people experience, such that high interaction with climate change content will lead to higher levels of eco-anxiety when moderated by lower levels of agency, and when moderated by higher levels of agency young people will have a lower level of eco-anxiety.

## **Method**

### **Participants**

A total amount of 207 respondents filled out the online survey that was developed for this quantitative research. These responses were recorded through the online survey program Qualtrics. Three responses were removed and deleted because they did not give informed consent, four responses were excluded from the dataset because they did not meet the requirement of having an active Instagram account. Further, three respondents were removed because they were not in the correct age range. Before doing the analyses, an outlier was found

which had an influence on the results, thus, this outlier was removed from the dataset. This left 196 responses to make up the complete dataset.

Of these 196 respondents 146 identified as female, 46 as male and 4 respondents identified as non-binary or a third gender. The mean age of the dataset was 24.8 ( $SD = 3.80$ ). The education level of the respondents is shown in table 1. Furthermore, 153 of the respondents originated from The Netherlands and 43 from other countries, see Appendix A for a more detailed overview of what countries the respondents originated from. 76,6% of respondents reported that they used the app multiple times per day, the frequency of Instagram usage is reflected in Table 2. Respondents reported that their average time spent on Instagram was 47 ( $SD = 31.36$ ) minutes every time they opened the app.

**Table 1**

*Education level of the respondents*

| Education level                         | N  | % of total |
|-----------------------------------------|----|------------|
| Less than a high school degree          | 2  | 1.0%       |
| High school degree                      | 34 | 17.3%      |
| Trade school or vocational school (MBO) | 19 | 9.7%       |
| Bachelor degree (HBO)                   | 50 | 25.5%      |
| University Bachelor degree (WO)         | 48 | 24.5%      |
| Master degree                           | 40 | 20.4%      |
| Higher than Master degree               | 2  | 1.0%       |
| Other:                                  | 1  | 0.5%       |

**Table 2**

*Frequency of Instagram usage*

| Frequency               | N   | % of total |
|-------------------------|-----|------------|
| Less than once a week   | 4   | 2.0%       |
| Once a week             | 2   | 1.0%       |
| Multiple times per week | 16  | 8.2%       |
| Once per day            | 23  | 11.7%      |
| Multiple times per day  | 151 | 77.0%      |

### **Survey distribution**

The survey was distributed mainly through multiple social media platforms. The researcher used the snowball method to distribute the link to the survey and gather respondents. The snowball method was enforced by reaching out to their personal network on social media and by asking friends and family to forward the link to the survey to their friends and family as well. Respondents were collected through multiple posts that included the link on Instagram stories, LinkedIn, Facebook and Facebook survey swap groups, WhatsApp was used as well as a medium to gather respondents.

### **Measures**

#### ***Eco-anxiety***

To measure eco-anxiety the scale from Hogg et al. (2021) was used in the online survey. The scale measured self-reported eco-anxiety as indicated by participants. The Hogg Eco-Anxiety Scale (HEAS-13) consisted of 13 items in which the respondents had to determine over the course of the last two weeks how often they had been bothered by problems described in the items when thinking about climate change. The answers options ranged from 1 = *not at all*, 2 = *several of the days*, and 3 = *over half of the days* to 4 = *nearly every day*. Items such as “Unable

to stop thinking about losses to the environment” or “Feeling nervous, anxious or on edge” were among the 13 items.

### ***Agency***

To measure agency in the context of climate change the scale from Lawrance et al. (2022) was used. The scale measured the self-reported agency to respond to climate change by participants. The respondents answered 9 questions to what extent they (think they) could do when it came to climate change. A 5-point Likert scale ranging from *strongly agree* to *strongly disagree* was used. Questions such as “I feel capable of making behavioural changes or taking actions to help reduce climate change” or “It is my responsibility to help do something about climate change” were included in the scale. Two of the items in the scale were reverse-coded “People have little control over forces of nature such as climate change” and “I believe that climate change is inevitable, no matter what we try and do to stop it”.

### ***Instagram usage and frequency***

To get a better insight into the usage of Instagram by young people some frequency questions were asked. This was divided into two parts, one part contained general usage and frequency with questions such as “How often do you use Instagram? This includes scrolling, liking, commenting or posting.” and “How many minutes on average do you spend on Instagram when you open the app?”.

The second part was prefaced with a short description about what exactly was meant with content about climate change on Instagram. Three screenshots of actual Instagram posts were shown to give the participants an idea of what climate change content can be. These three posts all showed a different side of climate change content, one post depicted climate activism, one post depicted a natural disaster, and one post depicted a promotion of a sustainable product. The

screenshots and full Qualtrics survey can be found in Appendix D. The short description was followed by 6 items where the respondents indicated on a scale from 0 to 10 how many posts about climate change they thought they had seen, liked, commented under, sent to others, reposted and posted themselves on Instagram in the previous week.

## **Procedure**

A survey was developed and put in the online program Qualtrics to distribute the link to the survey and to gather responses. The survey consisted of five parts, the first part was the introduction and informed consent. Participants had to agree that they fit the requirements and that they gave informed consent to use their data to continue to the survey. Two respondents did not agree and did not give their informed consent, so they were redirected to the end of the survey, their responses were deleted from the dataset.

The second part consisted mainly of demographic questions about the respondents. Age, gender, education level and country of origin were collected from the participants. These questions were not mandatory to answer to allow the respondents to maintain their privacy if they wanted to but to still collect their answers from the full survey. This part included a control question before the respondents continued to the next parts. The control question was “Do you have an active Instagram account?”, the next parts of the survey could only be answered if the respondents had an active Instagram account, thus this question was added to weed out any respondents that did not have active Instagram accounts even though this was a requirement in the first part. If the respondents answered “yes” they continued to the next parts of the survey, but if they answered “no” they were redirected to the end of the survey and their data was deleted from the dataset.

The third part consisted of questions about the frequency usage of Instagram and climate change content on Instagram. The fourth part was the scale from Lawrance et al. (2022) which measured the self-reported sense of agency to respond to climate change of the respondents. Then the last part, the Hogg Eco-Anxiety Scale which measured the level of eco-anxiety respondents had experienced. Once the survey questions had ended a thank-you-message was included with contact details from the researcher to conclude the survey.

## **Analyses**

To test the hypotheses based on the theoretical framework, reliability analyses were done to check all the variables used in this research before the collected data was analysed. The constructs, Instagram interaction, sense of agency and eco-anxiety were tested with the reliability analyses. Assumption checks were also done to test if the data was normally distributed and to check for skewness and kurtosis. After these tests, hypotheses 1, 2 and 3 were tested through linear regressions, and hypothesis 4 was tested through a moderation analysis. The results of these analyses has been reported in the result section.

## **Results**

### **Reliability analyses of the scales**

Instagram interaction was measured with six items (see Appendix C) where the respondents were asked about the number of posts they interacted with when they opened Instagram using a frequency scale ranging from 0 to 10 posts per week. The mean score was 0.712 ( $SD = 0.806$ ) and Cronbach's alpha of this scale was = .643. If the item, *amount of posts seen*, was removed, Cronbach's alpha improved to .700, if another item, *amount of posts liked*, was also removed it improved further to .956. These results were the reason to do an exploratory factor analysis to determine if this scale needed to be divided into subscales. Indeed, the

exploratory factor analysis showed two subscales, the first containing two items, posts seen and liked, that if removed from the original scale gave a better reliability score. These items were combined and renamed “passive Instagram interaction”. This subscale had good reliability, Cronbach’s alpha = .726 with a mean score of 1.93 ( $SD = 1.92$ ).

The other subscale consisted of four items; posts commented under, sent to others, reposted, and posted, these were combined and renamed “active Instagram interactions”. This subscale had excellent reliability, Cronbach’s alpha = .956 with a mean score of 0.103 ( $SD = 0.567$ ). Since the Instagram interaction scale has now been divided into two passive and active subscales these will be used in the analyses instead of the originally formed Instagram interaction scale. Appendix B shows the data from the exploratory factor analysis.

The construct agency was measured with nine 5-point Likert scale (1 = strongly agree, 5 = strongly disagree) items, 2 of which were reverse coded. A lower score meant a *higher* sense of agency and a higher score meant a *lower* sense of agency. The reliability of the scale was good, Cronbach’s alpha = .795. The mean score was 2.38 ( $SD = 0.639$ ), indicating that people scored relatively low on this scale but had a relatively high sense of agency.

The construct eco-anxiety was measured through 13 items, measured on a 4-point scale where respondents were asked how often over the last two weeks they were bothered by problems when thinking of climate change (1 = “not at all”, 2 = “several of the days”, 3 = “over half of the days”, 4 = “nearly every day”). The reliability of the scale was excellent, Cronbach’s alpha = .903. The mean score was 1.36 ( $SD = 0.429$ ), indicating that people scored relatively low on this scale and had a relatively low level of eco-anxiety.

### **Normality tests & assumption checks**

Normality checks were done to see if the data was normally distributed for all variables. Skewness and kurtosis were checked, and z-scores were calculated. Agency was highly skewed to the left (z-score skewness = 4.83, z-score kurtosis = 3.47). Instagram passive interaction was highly skewed to the left (z-score skewness = 9.74, z-score kurtosis = 10.23). Instagram active interaction was extremely skewed to the left (z-score skewness = 21.67, z-score kurtosis = 42.86). Eco-anxiety was also highly skewed to the left (z-score skewness = 10.33, z-score kurtosis = 14.10). All variables were leptokurtic ( $K > 0$ ) and positively skewed to the left. This all shows that the data was not normally distributed. The results are less robust than when the data would have been normally distributed although the large sample does offer some protection. Thus, the results should be carefully interpreted.

Assumption checks and outlier analysis were performed, if Cook's Distance was greater than 1 this indicated as an outlier. One outlier was found and removed from the dataset as indicated in the method section. After removing the outlier from the dataset, the assumption checks were run again, and no outliers were found. The outlier was found during the testing of hypothesis 2, therefore the linear regression on hypothesis 1 was applied again and results were updated. The removal of the outlier had a reasonable impact on the results.

## **Data analyses**

### ***Instagram interaction as predictor for eco-anxiety***

A linear regression was used to test if a higher level of Instagram interaction leads to a higher level of eco-anxiety (hypothesis 1). Both passive and active Instagram interaction mean scores were set as predictors and eco-anxiety mean score was set as the dependent variable. The regression model was significant ( $R^2 = .17$ ,  $F(2, 193) = 19.5$ ,  $p < .001$ ), showing that 17% of the variance in eco-anxiety could be explained by the regression model.

Passive Instagram interaction is a significant predictor of the level of eco-anxiety young people experience ( $b = 0.06$ ,  $\beta = .28$ ,  $t(193) = 4.22$ ,  $p < .001$ ). One point higher on the passive Instagram interaction scale increases the levels of eco-anxiety by 0.06 points. A higher amount of passive Instagram interaction thus leads to a higher level of eco-anxiety. Active Instagram interaction is a significant predictor of the level of eco-anxiety young people experience ( $b = 0.52$ ,  $\beta = .26$ ,  $t(193) = 3.84$ ,  $p < .001$ ). One point higher on the active Instagram interaction scale increases the levels of eco-anxiety by 0.52 points. A higher amount of active Instagram interaction also leads to a higher level of eco-anxiety.

Passive Instagram interaction shows a significant effect on the level of eco-anxiety young people experience; it positively influences level of eco-anxiety such that higher levels of passive Instagram interaction led to significantly higher levels of eco-anxiety. Additionally, active Instagram interaction has a much larger significant effect on the level of eco-anxiety young people experience where it also positively influences eco-anxiety, such that a higher level of active Instagram interaction leads to more eco-anxiety. Thus, these results support hypothesis 1, with both passive and active Instagram interaction positively influencing the level of eco-anxiety young people experience.

### ***Instagram interaction as predictor for sense of agency***

To test if more Instagram interaction leads to a lower sense of agency (hypothesis 2), a linear regression analysis was conducted with passive and active Instagram interaction mean scores as predictors and agency mean score as the dependent variable. The regression model variance was significant ( $R^2 = .06$ ,  $F(2, 193) = 5.96$ ,  $p = .003$ ), showing that 6% of the variance of sense of agency could be explained by the regression model.

Passive Instagram interaction is a significant predictor of a sense of agency ( $b = -0.07$ ,  $\beta = -.22$ ,  $t(193) = -3.06$ ,  $p = .002$ ). One point higher on the passive Instagram interaction scale reduces the sense of agency young people experience by 0.22 points. A higher score on passive Instagram interaction leads to a higher score on sense of agency, which means that a *higher* amount of passive Instagram interaction leads to a *lower* sense of agency. In contrast, active Instagram interaction is not a significant predictor of a sense of agency ( $b = -0.24$ ,  $\beta = -.07$ ,  $t(193) = -1.05$ ,  $p = .293$ ). Whatever the level of active Instagram interaction is, there is no relation with sense of agency.

Active Instagram interaction does not have a significant effect on sense of agency. Although the predicted negative influence is present, where more active Instagram interaction leads to a lower sense of agency, this influence for passive Instagram interaction is not significant. These results do not support hypothesis 2. Nevertheless, effect-size of agency is larger for active interaction than for passive interaction. However, passive Instagram interaction does show a significant effect on sense of agency, it negatively influences sense of agency such that more passive Instagram interaction lead to significantly lower levels of agency. Thus, these results partly support hypothesis 2, with only passive Instagram interaction having a significant effect on sense of agency, yet with active Instagram interaction having a bigger effect-size.

### ***Sense of agency as predictor for eco-anxiety***

The hypothesized negative relationship between agency and eco-anxiety (hypothesis 3) was tested through a linear regression. Agency mean score was set as the predictor and eco-anxiety mean score was set as the dependent variable. The regression model variance was not significant ( $R^2 = .01$ ,  $F(1, 194) = 1.38$ ,  $p = .242$ ), since there was no significant effect the variance of eco-anxiety could not be explained. Agency therefore is also not a significant

predictor of eco-anxiety ( $b = -0.05$ ,  $\beta = -.08$ ,  $t(194) = -1.17$ ,  $p = .242$ ). The results do not support hypothesis 3, even though the data suggests a negative relationship, no significant effects were found.

***Agency as moderator of the effect of Instagram interaction on eco-anxiety***

Finally, to test hypothesis 4 and see if agency will negatively moderate the relationship between Instagram interaction and eco-anxiety, a moderation analysis was performed. In this analysis, Instagram passive interaction mean score and Instagram active interaction mean score were entered as the predictors in two separate analyses, with agency mean score as the moderator and eco-anxiety mean score as the dependent variable. Since the data were not normally distributed, bootstrapping was performed. The results of the moderation analysis where passive interaction on Instagram acted as the predictor are reflected in Table 3, and the results of the moderation analysis where active interaction on Instagram acted as the predictor are reflected in Table 4.

Passive interaction on Instagram significantly influences the level of eco-anxiety ( $b = 0.07$ ,  $p < .001$ ) as found in hypothesis 1. Active interaction on Instagram also significantly influences the level of eco-anxiety ( $b = 0.61$ ,  $p < .001$ ), active interaction has a bigger effect-size than passive interaction as reported in the results of hypothesis 1. Agency showed no significant effects on eco-anxiety with neither passive Instagram interaction as predictor ( $b = -0.01$ ,  $p = 0.923$ ) or with active Instagram interaction as predictor ( $b = -0.03$ ,  $p = 0.464$ ) therefore agency does not influence the level of eco-anxiety, as found in hypothesis 3.

The moderation effect of agency on eco-anxiety with passive interaction as predictor was not significant ( $b = 0.02$ ,  $p = 0.444$ ), and with active interaction as predictor the moderation effect of agency on eco-anxiety was also not significant ( $b = -0.001$ ,  $p = 0.996$ ). Passive

interaction had a slightly bigger effect-size in the moderation than active interaction. However, because the moderation had no effect with either predictor, these results do not support hypothesis 4.

**Table 3**  
*Bootstrapped Moderation Estimates*

|                                        | Estimate | SE    | 95% Confidence Interval |       | Z     | p      |
|----------------------------------------|----------|-------|-------------------------|-------|-------|--------|
|                                        |          |       | Lower                   | Upper |       |        |
| Instagram passive interaction          | 0.074    | 0.019 | 0.03                    | 0.11  | 3.90  | < .001 |
| Agency                                 | -0.005   | 0.047 | -0.09                   | 0.09  | -0.10 | 0.923  |
| Instagram passive interaction * Agency | 0.020    | 0.026 | -0.04                   | 0.06  | 0.77  | 0.444  |

**Table 4**  
*Bootstrapped Moderation Estimates*

|                                       | Estimate | SE    | 95% Confidence Interval |       | Z     | p      |
|---------------------------------------|----------|-------|-------------------------|-------|-------|--------|
|                                       |          |       | Lower                   | Upper |       |        |
| Instagram active interaction          | 0.609    | 0.175 | 0.20                    | 0.86  | 3.48  | < .001 |
| Agency                                | -0.033   | 0.045 | -0.12                   | 0.06  | -0.73 | 0.464  |
| Instagram active interaction * Agency | -0.001   | 0.308 | -0.79                   | 0.27  | -0.00 | 0.996  |

## Discussion

The purpose of this study was to find out how interaction with climate change content on Instagram influenced the level of eco-anxiety in young people, and what the role of agency was in this relationship. This exploratory research was done through a quantitative research method where an online survey was distributed using a snowballing method among Instagram users between 18 and 35 years old. The respondents reported their Instagram interaction, sense of agency and the level of eco-anxiety they might experience. However, the dataset was not

normally distributed and thus was not robust, therefore the results will have to be carefully interpreted.

Four hypotheses were formed to test if the expectation could be confirmed that the amount of interaction with climate change content on Instagram would influence the level of eco-anxiety young people would experience. It was also expected that sense of agency would act as a moderator in this relationship. Linear regressions and a moderation analysis were performed to test the hypotheses and the results showed that hypothesis 1 was supported, hypothesis 2 was partly supported and hypotheses 3 and 4 were not supported by the results.

The results of this research showed that when young people interacted more with climate change content on Instagram they were more likely to have a higher level of eco-anxiety. This was confirmed for both passive and active interaction with climate change content on Instagram. This result supports the literature which shows that media exposure to climate change content influences the level of eco-anxiety young people experience (Loll et al., 2023; Maran & Begotti, 2021; Shao & Yu, 2023). This result also adds to the growing literature on Instagram and eco-anxiety research, by finding evidence that interaction with climate change content on the social media platform Instagram leads to eco-anxiety among young people.

The Instagram interaction scale had to be divided into two subscales, passive and active Instagram interaction. Passive interaction with climate change content on Instagram contained scrolling or browsing through posts, and liking posts related to climate change content. These interaction types were dubbed passive since they do not require conscious effort to execute as Instagram user, these actions are an automation (Gonzalez et al., 2023; Márquez et al., 2023). Active interaction with climate change content on Instagram however included the items where an Instagram user had to consciously put in effort to interact with climate change content

(Gonzalez et al., 2023; Ryan & Linehan, 2022), these interaction types were commenting, sending content to other users, reposting content and users posting content themselves. Since young people's social media accounts are carefully curated representations of themselves (Márquez et al., 2023), they might be more conscious of how they interact with climate change content on Instagram.

This is reflected in the results because active interaction showed a bigger effect-size than passive interaction with climate change content on Instagram. This difference can be explained by the amount of conscious effort that is required from the respondents to actively interact with content. Instagram users need to process the visual and textual information presented in the climate change content before they would decide to interact through either commenting, sharing, or reposting the content (Gonzalez et al., 2023; Ryan & Linehan, 2022).

Young people's social media accounts are carefully curated representations of themselves (Márquez et al., 2023), thus actively interacting with this kind of content requires them to process the visual and textual information that is present in the climate change content to evaluate if this fits with the image they are presenting of themselves on Instagram (Márquez et al., 2023). Hence why it would make sense that active interaction has a bigger effect on eco-anxiety, because the respondents would have to be aware of what they are interacting with, which might make them more aware of the climate change crisis and thus increases their eco-anxiety.

Only passive interaction with climate change content on Instagram showed a significant effect on young people's sense of agency, active interaction did not have a significant influence. Thus, when young people passively interacted with climate change content on Instagram their level of agency was lower. Interestingly, the effect-size of active interaction was bigger than that

of passive interaction. An explanation for this could be that active interaction is inherently more agentic than passive interaction. Thus, why it makes sense that passive interaction, which needs no to low conscious effort to interact with climate change content, leads to low agency.

Sense of agency is about taking intentional action and putting in conscious effort to reach a future goal (Bandura, 2017 as cited in Ryan & Linehan, 2022). Furthermore, to curate an account that represents them well, young people need to plan to get to the desired outcome, so to actively interact by for example reposting a video about climate change young people have needed to consciously process the post and its contents. Which shows that active interaction requires more agency than passive interaction, where only liking a photo would be less reflective off their curated Instagram account.

Surprisingly, sense of agency showed no significant influence on the level of eco-anxiety in young people. It was found that a higher sense of agency leads to a higher level of eco-anxiety, but this effect was small and not significant. Thus, hypothesis 3 was not supported by the results. Moreover, sense of agency was also expected to play a moderating role between the relationship of interaction with climate change content on Instagram and its influence on eco-anxiety in young people. However, the results showed no significant effects thus this hypothesis was not supported. Neither influence of active nor passive interaction on eco-anxiety showed any significance with agency as moderator.

This research also has some limitations, the main one being that the data was not normally distributed and highly skewed. This needs to be taken into consideration when interpreting the results. A reason could be that there were respondents who were not at all eco-anxious, this could be solved in the future by testing respondent's eco-anxiety level before the survey and selecting people that are more eco-anxious to fill out the survey to get more evenly distributed data.

Another solution is to adapt the Instagram interaction scale, because only during analyzing the results it was discovered that there were two subscales. By taking the subscales into account the answer measurements could be adapted to better fit with the subscales. For example, the active interaction subscale could have a smaller range since it may require more effort to actively interact with climate change content than it is to passively interact. Gender was also highly skewed toward the female sex; therefore, it is difficult to generalize these findings toward a broader population.

Fortunately, the large number of respondents in this research, with only 11 responses having to be removed, positively impacts the interpretation of the results. Furthermore, this study contributes to the existing literature on climate change, Instagram, and eco-anxiety among young people, confirming previous findings by Maran and Begotti (2021), Lawrance et al. (2022) and Loll et al. (2023). Additionally, it enhances research on social media and climate change concerning young people, addressing the importance of the climate change crisis now and in the future. It further provides insight into how a major social media platform like Instagram can influence climate change perceptions and the emotional well-being of its young users.

In conclusion, based on the current research, it was found that interacting with climate change content on Instagram has a significant effect on the level of eco-anxiety among young people. Both passive and active Instagram interaction increase eco-anxiety, with active interaction having a bigger effect. However, sense of agency does not significantly moderate this relationship, nor does it have a significant influence on eco-anxiety.

### **Intellectual Property and Technology Statement**

All contents of this master thesis are the work of the author, Jolinde Feenstra, all text, data, analyses, interpretations, and conclusions are this author's original work. The digital tool DeepL was used for help with translations, the AI tool ChatGPT was used in the early stages of brainstorming ideas for this thesis and later for help with formulation of the text. Finally, the digital tool Jamovi was used to perform the data analyses.

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## Appendix A

**Table A1**

*Frequency table of countries of origin of all respondents*

| Country                                                 | N   | % of total |
|---------------------------------------------------------|-----|------------|
| Australia                                               | 1   | 0.5 %      |
| Austria                                                 | 2   | 1.0 %      |
| China                                                   | 1   | 0.5 %      |
| Czech Republic                                          | 1   | 0.5 %      |
| Denmark                                                 | 2   | 1.0 %      |
| France                                                  | 1   | 0.5 %      |
| Germany                                                 | 8   | 4.1 %      |
| Greece                                                  | 1   | 0.5 %      |
| Hungary                                                 | 1   | 0.5 %      |
| India                                                   | 3   | 1.5 %      |
| Malaysia                                                | 3   | 1.5 %      |
| Mauritius                                               | 1   | 0.5 %      |
| Morocco                                                 | 1   | 0.5 %      |
| Netherlands                                             | 153 | 78.1 %     |
| Poland                                                  | 4   | 2.0 %      |
| South Africa                                            | 1   | 0.5 %      |
| South Korea                                             | 1   | 0.5 %      |
| Sweden                                                  | 1   | 0.5 %      |
| Switzerland                                             | 1   | 0.5 %      |
| United Kingdom of Great<br>Britain and Northern Ireland | 5   | 2.6 %      |
| United States of America                                | 4   | 2.0 %      |

## Appendix B

The results presented in Table B1 are from executing an exploratory factor analysis to see if the Instagram interaction scale needs to be divided into subscales. The results show that the scale can be divided into two subscales. Subscale 1 will be referred to as “active Instagram interaction” and subscale 2 will be referred to as “passive Instagram interaction”.

**Table B1**  
*Factor Loadings*

|               | <b>Factor</b> |          | <b>Uniqueness</b> |
|---------------|---------------|----------|-------------------|
|               | <b>1</b>      | <b>2</b> |                   |
| Posts_see     |               | 0.932    | 0.131             |
| Posts_like    |               | 0.648    | 0.569             |
| Posts_comment | 0.743         |          | 0.448             |
| Posts_sent    | 0.508         |          | 0.686             |
| Posts_repost  | 0.762         |          | 0.409             |
| Posts_posted  | 0.737         |          | 0.454             |

*Note.* 'Minimum residual' extraction method was used in combination with a 'varimax' rotation

## Appendix C

### Scales used in the survey

*Lawrance et al. (2022) "Self-reported agency to respond to climate change"*

“The following few questions are about things you (think you) can do when it comes to climate change.”

To what extent do you agree or disagree with the following statements?

1. I am aware of individual behaviours or actions that can help reduce climate change.
2. I feel capable of making behavioural changes or taking actions to help reduce climate change
3. I believe my behaviour and actions as an individual will make a difference to climate change
4. I believe my behaviour and actions have a positive influence on how I am feeling and thinking about climate change
5. My actions to reduce the effects of climate change will encourage others to change their own behaviour
6. People have little control over the forces of nature such as climate change
7. I believe that climate change is inevitable, no matter what we try and do to stop it.
8. I feel a sense of urgency to change my behaviour to help reduce climate change
9. It is my responsibility to help do something about climate change.

*Response scale: 1 Strongly agree, 2 agree, 3 neither agree nor disagree, 4 disagree, 5 Strongly disagree*

*Hogg Eco-Anxiety Scale (HEAS-13) (Hogg et al., 2021)*

“Over the last 2 weeks, how often have you been bothered by the following problems when thinking about climate change and other global environmental conditions (e.g., global warming,

ecological degradation, resource depletion, species extinction, ozone hole, pollution of the oceans, deforestation)?”

1. Feeling nervous, anxious or on edge
2. Not being able to stop or control worrying
3. Worrying too much
4. Feeling afraid
5. Unable to stop thinking about future climate change and other global environmental problems
6. Unable to stop thinking about past events related to climate change
7. Unable to stop thinking about losses to the environment
8. Difficulty sleeping
9. Difficulty enjoying social situations with family and friends
10. Difficulty working and/or studying
11. Feeling anxious about the impact of your personal behaviours on the earth
12. Feeling anxious about your personal responsibility to help address environmental problems
13. Feeling anxious that your personal behaviours will do little to help fix the problem

Response scale: 0 = *not at all*, 1 = *several of the days*, 2 = *over half the days*, 3 = *nearly every day*.

## Appendix D

Complete survey with questions and scales as filled out by respondents

# Thesis Survey 2024

---

### Start of Block: Introduction

#### Q1 Thank you for participating in this study!

##### **The Study**

The aim of this study is to gain a better insight into how content about climate change on Instagram may influence feelings about climate change. This study is conducted through a survey. First, you will answer some demographic questions, followed by a few questions about Instagram, climate change and finally your feelings about climate change. The survey takes about 5-6 minutes to complete.

You must be between 18 and 35 years old and have an active Instagram account to participate in this study.

##### **Participation**

Participation in this study is completely voluntary. You have the right to decline taking part and can withdraw during the study anytime without facing negative consequences. You also do not have to provide an explanation for your withdrawal. There are no risks associated with participating, nor are there any benefits associated with it.

##### **Data**

The data that will be gathered from the participant will be treated confidentially and processed anonymously. It will only be used for research and educational purposes. This data will be in protective storage available to the researcher and will not be shared with third parties. The data will be stored for the duration of this study on the researchers hard-drive and will be removed once this study is finished.

##### **Contact**

This survey is conducted for the Master thesis of student Jolinde Feenstra following the Master Communication and Information Sciences at Tilburg University. If you have any remarks or questions regarding this research, you may contact Jolinde Feenstra at [j.j.feenstra@tilburguniversity.edu](mailto:j.j.feenstra@tilburguniversity.edu).

By continuing this survey, you agree that you are 18 years old or older and have an active

Instagram account, and you agree that you have read and understood the information regarding this research.

☐ I AGREE that I am 18 years old or older AND have an active Instagram account and I give my informed consent to continue with the survey. (1)

☐ I DO NOT AGREE with the above information, I do NOT have an active Instagram account OR I am not 18 years old or older and I do not give my informed consent to continue with the survey. (2)

*Skip To: End of Survey If Thank you for participating in this study! The Study The aim of this study is to gain a better in... = I DO NOT AGREE with the above information, I do NOT have an active Instagram account OR I am not 18 years old or older and I do not give my informed consent to continue with the survey.*

**End of Block: Introduction**

---

**Start of Block: Demographic questions**

Q26 The next few questions are all demographic questions:

-----

Q2 What is your age? (Only numbers, example: 23)

\_\_\_\_\_

-----

Page Break

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Q3 What is your gender?

- ☐ Male (1)
- ☐ Female (2)
- ☐ Non-binary / third gender (3)
- ☐ Prefer not to say (4)

---

Page Break

Q4 What is the highest level of education you completed?

- ☐ Less than a high school degree (1)
- ☐ High school degree (2)
- ☐ Trade school or vocational training (MBO) (3)
- ☐ Bachelor degree (HBO) (4)
- ☐ University Bachelor degree (WO) (5)
- ☐ Master degree (6)
- ☐ Higher than Master degree (7)
- ☐ Other: (8) \_\_\_\_\_

---

Page Break



country Which country are you from?

▼ Afghanistan (1) ... Zimbabwe (1357)

End of Block: Demographic questions

---

Start of Block: Instagram questions

Q9 Do you have an active Instagram account?

☐ Yes (1)

☐ No (2)

*Skip To: End of Survey If Do you have an active Instagram account? = No*

---

Page Break

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Q10 How often do you use Instagram? This includes scrolling, liking, commenting or posting.

|                              | Less than<br>once a week<br>(1) | Once a week<br>(2)    | Multiple<br>times per<br>week (3) | Once per day<br>(4)   | Multiple<br>times per day<br>(5) |
|------------------------------|---------------------------------|-----------------------|-----------------------------------|-----------------------|----------------------------------|
| I use<br>Instagram...<br>(1) | <input type="radio"/>           | <input type="radio"/> | <input type="radio"/>             | <input type="radio"/> | <input type="radio"/>            |

Q11 This question is about your average time spent on Instagram, these next steps show you how to find this on your Instagram app:

1. Open Instagram on your phone.
2. Tap profile or your profile picture in the bottom right to go to your profile.
3. Tap Menu, three horizontal stripes in the top right corner.
4. Tap Your activity (NL: Je activiteit), then tap Time spent (NL: Bestede tijd).
5. You will be able to see the average time per day you spent on Instagram in the past week.

How many minutes on average do you spend on Instagram when you open the app?

0 15 30 45 60 75 90 105 120

|                                                                    |                                                                                      |
|--------------------------------------------------------------------|--------------------------------------------------------------------------------------|
| The amount of minutes I spend on Instagram<br>on average is ... () |  |
|--------------------------------------------------------------------|--------------------------------------------------------------------------------------|

End of Block: Instagram questions

Start of Block: Intro in-depth instagram questions

Q12 The next few questions are about all the **content** you see on Instagram. In particular, we are interested in content that has to do with climate change. The content can be any posts ranging from photos and reels to stories. These could have been posted by, for example: friends, news outlets, influencers, advertisements/sponsored posts, following accounts or recommended posts.

Climate change content can be any post related to climate change, this includes: posts about anything extreme weather, activism, recycling, greenwashing, etc.

Here are a few examples:

CNNCLIMATE

Posts

Follow

cnn and cnnclimate

1/5



CNN

23.676 likes

cnn

 The death toll from a series of catastrophic floods in the southern Brazilian state of Rio Grande do Sul has risen to at least 83, the state's civil defense unit said Monday.

Authorities are also investigating another four deaths to determine if they were related to the storms.

A further 276 people are reportedly injured and at least

impact and 3 others

gretathunberg

Parliament House, Stockholm



36.334 likes

gretathunberg

 Week 298. #FridaysForFuture #ClimateStrike #ClimateJusticeNow

View all 1.167 comments

4 days ago

1/10

impact

Instead of throwing your old phone case away, this brand will turn it into new products.

Swipe to learn about the **Re/CASETiFY** program.



31.474 likes

impact

 Don't throw your old phone cases away. Turn them into something new instead. ❤️ ... more

View all 141 comments

### End of Block: Intro in-depth instagram questions

### Start of Block: In-depth instagram questions

Q13 In the last week, how many posts about climate change do you think you have seen on Instagram?

0 1 2 3 4 5 6 7 8 9 10

The amount of posts I see is... ()



Q17 In the last week, how many posts about climate change do you think you have liked on Instagram?

0 1 2 3 4 5 6 7 8 9 10

The amount of posts I like is... ()



Q18 In the last week, how many posts about climate change do you think you have commented under on Instagram?

0 1 2 3 4 5 6 7 8 9 10

The amount of posts I comment under is... ()



Q19 In the last week, how many posts about climate change do you think you have sent to others on Instagram?

0 1 2 3 4 5 6 7 8 9 10

The amount of posts I send to others is... ()



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Q21 In the last week, how many posts about climate change do you think you have reposted on Instagram?

0 1 2 3 4 5 6 7 8 9 10

The amount of posts I repost is... ()



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Q20 In the last week, how many posts about climate change do you think you have posted yourself on Instagram?

0 1 2 3 4 5 6 7 8 9 10

The amount of posts I post myself is... ()



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End of Block: In-depth instagram questions

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Start of Block: Agency

Q14 The following questions are about things you (think you) can do when it comes to climate change.

To what extent do you agree or disagree with the following statements?

|                                                                                                                        | Strongly agree (1)    | Somewhat agree (2)    | Neither agree nor disagree (3) | Somewhat disagree (4) | Strongly disagree (5) |
|------------------------------------------------------------------------------------------------------------------------|-----------------------|-----------------------|--------------------------------|-----------------------|-----------------------|
| I am aware of individual behaviours or actions that can help reduce climate change (1)                                 | <input type="radio"/> | <input type="radio"/> | <input type="radio"/>          | <input type="radio"/> | <input type="radio"/> |
| I feel capable of making behavioural changes or taking actions to help reduce climate change (2)                       | <input type="radio"/> | <input type="radio"/> | <input type="radio"/>          | <input type="radio"/> | <input type="radio"/> |
| I believe my behaviour and actions as an individual will make a difference to climate change (3)                       | <input type="radio"/> | <input type="radio"/> | <input type="radio"/>          | <input type="radio"/> | <input type="radio"/> |
| I believe my behaviour and actions have a positive influence on how I am feeling and thinking about climate change (4) | <input type="radio"/> | <input type="radio"/> | <input type="radio"/>          | <input type="radio"/> | <input type="radio"/> |

My actions to  
reduce the  
effects of  
climate  
change will  
encourage  
others to  
change their  
own  
behaviour (5)



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Page Break

Q23 To what extent do you agree or disagree with the following statements?

|                                                                                          | Strongly<br>agree (1) | Somewhat<br>agree (2) | Neither agree<br>nor disagree<br>(3) | Somewhat<br>disagree (4) | Strongly<br>disagree (5) |
|------------------------------------------------------------------------------------------|-----------------------|-----------------------|--------------------------------------|--------------------------|--------------------------|
| People have little control over the forces as nature such as climate change (1)          | <input type="radio"/> | <input type="radio"/> | <input type="radio"/>                | <input type="radio"/>    | <input type="radio"/>    |
| I believe that climate change is inevitable, no matter what we try and do to stop it (2) | <input type="radio"/> | <input type="radio"/> | <input type="radio"/>                | <input type="radio"/>    | <input type="radio"/>    |
| I feel a sense of urgency to change my behaviour to help reduce climate change (3)       | <input type="radio"/> | <input type="radio"/> | <input type="radio"/>                | <input type="radio"/>    | <input type="radio"/>    |
| It is my responsibility to help do something about climate change (4)                    | <input type="radio"/> | <input type="radio"/> | <input type="radio"/>                | <input type="radio"/>    | <input type="radio"/>    |

End of Block: Agency

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### Start of Block: Eco-anxiety

Q15 Over the last 2 weeks, how often have you been bothered by the following problems when thinking about climate change and other global environmental conditions? (e.g., global warming, ecological degradation, resource depletion, species extinction, ozone hole, pollution of the oceans, deforestation, etc)

|                                                                                                 | Not at all (1)        | Several of the days (2) | Over half the days (3) | Nearly every day (4)  |
|-------------------------------------------------------------------------------------------------|-----------------------|-------------------------|------------------------|-----------------------|
| Feeling nervous, anxious or on edge (1)                                                         | <input type="radio"/> | <input type="radio"/>   | <input type="radio"/>  | <input type="radio"/> |
| Not being able to stop or control worrying (2)                                                  | <input type="radio"/> | <input type="radio"/>   | <input type="radio"/>  | <input type="radio"/> |
| Worrying too much (3)                                                                           | <input type="radio"/> | <input type="radio"/>   | <input type="radio"/>  | <input type="radio"/> |
| Feeling afraid (4)                                                                              | <input type="radio"/> | <input type="radio"/>   | <input type="radio"/>  | <input type="radio"/> |
| Unable to stop thinking about future climate change and other global environmental problems (5) | <input type="radio"/> | <input type="radio"/>   | <input type="radio"/>  | <input type="radio"/> |

Q24 Over the last 2 weeks, how often have you been bothered by the following problems when thinking about climate change and other global environmental conditions? (e.g., global warming, ecological degradation, resource depletion, species extinction, ozone hole, pollution of the oceans, deforestation, etc)

|                                                                         | Not at all (1)        | Several of the days (2) | Over half the days (3) | Nearly every day (4)  |
|-------------------------------------------------------------------------|-----------------------|-------------------------|------------------------|-----------------------|
| Unable to stop thinking about past events related to climate change (1) | <input type="radio"/> | <input type="radio"/>   | <input type="radio"/>  | <input type="radio"/> |
| Unable to stop thinking about losses to the environment (2)             | <input type="radio"/> | <input type="radio"/>   | <input type="radio"/>  | <input type="radio"/> |
| Difficulty sleeping (3)                                                 | <input type="radio"/> | <input type="radio"/>   | <input type="radio"/>  | <input type="radio"/> |
| Difficulty enjoying social situations with family and friends (4)       | <input type="radio"/> | <input type="radio"/>   | <input type="radio"/>  | <input type="radio"/> |
| Difficulty working and/or studying (5)                                  | <input type="radio"/> | <input type="radio"/>   | <input type="radio"/>  | <input type="radio"/> |

Q25 Over the last 2 weeks, how often have you been bothered by the following problems when thinking about climate change and other global environmental conditions? (e.g., global warming, ecological degradation, resource depletion, species extinction, ozone hole, pollution of the oceans, deforestation, etc)

|                                                                                               | Not at all (1)        | Several of the days (2) | Over half the days (3) | Nearly every day (4)  |
|-----------------------------------------------------------------------------------------------|-----------------------|-------------------------|------------------------|-----------------------|
| Feeling anxious about the impact of your personal behaviours on the earth (1)                 | <input type="radio"/> | <input type="radio"/>   | <input type="radio"/>  | <input type="radio"/> |
| Feeling anxious about your personal responsibility to help address environmental problems (2) | <input type="radio"/> | <input type="radio"/>   | <input type="radio"/>  | <input type="radio"/> |
| Feeling anxious that your personal behaviours will do little to help fix the problem (3)      | <input type="radio"/> | <input type="radio"/>   | <input type="radio"/>  | <input type="radio"/> |

End of Block: Eco-anxiety

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Start of Block: Debriefing

Q27 Thank you for participating in this survey!

If you have any questions or remarks, do not hesitate to email to [j.j.feenstra@tilburguniversity.edu](mailto:j.j.feenstra@tilburguniversity.edu).

**To submit the survey, please continue to the next page.**

End of Block: Debriefing

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