Emotions Matter

Raising Awareness about the Importance of Emotions for Sustainability Students and their Well-Being

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Abstract

Due to the focus of their study program, environmental and sustainability students are vulnerable to experience negative emotional impacts, potentially affecting their mental health. This thesis contributes to increased understanding of emotions and emotional resilience in relation to the climate crisis by examining experienced emotions, studying the power students have over their emotions, and potential supporting measures. A mixed methodology approach of quantitative and qualitative data was applied, and an online survey and interviews were conducted with students of sustainability and environmental programs at Lund University, Sweden. The findings indicate that students mainly experience negative emotions, impacting their behavior and well-being. Students perceive to have limited power over their emotions, especially negative emotions. The university and faculty are seen as important actors to support students with different initiatives. Emotions play a vital role to address sustainability challenges and increased emotional resilience can foster lasting commitment towards sustainability science and sustainability issues.

Keywords: sustainability students, emotions, negative emotions, emotional resilience, coping, mental health

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Abbreviations

CC	Climate Change
EI	Emotional Intelligence
ER	Emotional Resilience
LU	Lund University
RQ	Research Question

If you're depressed, it's hard to do any like changes really at all. Even if you're not depressed but still, like, mentally down … it's hard to do something that might serve a greater purpose like doing things for the environment, if it makes an inconvenience in your life. That stuff is hard, it's hard when you feel good as well, but it's even harder if you're, like, mentally drained. (Female student, Applied Climate Strategy, Lund University)

1. Introduction

1.1 The Climate Crisis, (Sustainability) Science and Emotions

The majority of scientists agree that climate change (CC) poses a major threat to human health (IPCC, 2018). Despite this knowledge, there are little effective political actions or social change (Frantz & Mayer, 2009) and many scientists claim that it may already be too late to achieve the Paris Agreement's aim of limiting average global temperature increases to 1.5 °C (Anderson & Bows, 2011; Brown, Alexander, Arneth, Holman, & Rounsevell, 2019). Even though the certainty that CC will impact our planet is significantly increasing, it is impossible to foresee the exact effects, or the time and occurrence (Giorgi, 2005).

The knowledge about the threats from CC combined with an uncertainty about the future is likely to generate emotional responses of individuals and especially of people being more involved in the field (Clayton, 2020). Still, the ways how emotions are handled in relation to CC are restricted (Chu & Yang, 2019). Especially in the scientific area emotions are frequently separated from the construction of CC, as it is largely seen as a scientific and rational concern (Head & Harada, 2017). The depiction of scientific knowledge strongly impacts the assessment of political agendas and the evaluation of the accountability of both governments and the public to effectively address CC impacts and responses. This implicitly expects science to engage with environmental issues as emotionless as possible (Carvalho, 2007).

Nevertheless, past and present research highlights and acknowledges the role of emotions, especially its role on how CC is received by people (Rees, Klug, & Bamberg, 2015), but also how it influences CC policies and the discourses of fear and risk (Pain, 2009; Pain, Panelli, Kindon, & Little, 2010), its role in environmental movements (Schlosberg & Collins, 2014), CC denial or anti-CC demonstrations (Norgaard, 2006; Stoll-Kleemann, O'Riordan, & Jaeger, 2001), its influence on how representations of

CC are represented in the media ((Loureiro & Alló, 2020), as well as its influence on fostering environmentally responsible behaviors (Carter, 2011).

Bringing this evidence into the objective conversation within sustainability science reveals the essential role of emotions to understand the CC challenge. Yet, there is still limited attention to the emotions felt by people engaged in environmental issues and the direct effects on individuals' well-being and mental health (Head & Harada, 2017). There have however been demands for a greater awareness of the emotional dimensions of CC within the field of sustainability science (Wamsler et al., 2018), where the links between CC, emotions, and an individual's mental health and well-being have been highlighted (Farbotko & McGregor, 2010; Ives, Freeth, & Fischer, 2020). While scientists are increasingly willing to talk about their personal emotional responses to matters related to the climate crisis (Dominey-Howes, 2015; Willis, 2012), the western cultural context of science continuous to emphasize the importance of scientific rationality, thereby disregarding (negative) emotions in relation to the climate crisis (Scherer, 2011).

As already argued by Ives et al. (2020), sustainability science ought to take the next step towards acknowledging the value of inner worlds, encouraging sustainability scholars and practitioners to develop and strengthen their inner resources as these are essential to address sustainability challenges effectively. Similarly, this thesis will argue that emotions play a vital role for a person's well-being and emotions evoked by the climate crisis can impact our mental well-being. These responses can either allow or hinder the lasting commitment towards sustainability science and confront sustainability issues (Stanley, Hogg, Leviston, & Walker, 2021).

So far however, only a few studies are available that examine the emotional responses of individuals working in the environmental and sustainability area. Nevertheless, results show that this group experiences exceptionally high mental health risks since they typically have more knowledge about environmental issues and are dealing with the topic, through research or personal experience, on almost a daily basis (Clayton, 2018). These studies have mostly focused on sustainability scientists and the potential impacts on their mental health (Clayton, 2018; Gordon, Radford, & Simpson, 2019; Head & Harada, 2017). While this is a first step into the right direction, there is a necessity to widen the research and include also other groups, such as students involved while studying these topics.

Indeed, only a few studies have been conducted targeting sustainability and environmental students (e.g. Pihkala, 2020), despite studies showing that these students are particularly vulnerable to experience negative emotions, affecting their mental health (Verlie, 2019). Other academic disciplines like nursing or social work actively prepare students to manage situations of complexity and

uncertainty by learning stress management and self-care strategies to protect their own well-being (Jackson, Firtko, & Edenborough, 2007), but this is not yet the case for disciplines focused on sustainability, environmental and climate issues, including sustainability sciences. In nursing and social work studies, the concepts of emotional resilience (ER) and emotional intelligence (EI) are highlighted as a pathway to cope and manage stress and negative emotions linked to the topics of study (McAllister & McKinnon, 2009). Within sustainability sciences however, ER has only recently started to be explored. Yet, there are indications that students might profit from this concept, as a means for people to respond to the possibly negative emotions that may emerge due to the complexity, uncertainty and seriousness of the focus of their study programs (Schneider, Lyons, & Khazon, 2013).

1.2 Research Purpose and Research Questions

The aim of this thesis is to further close this research gap by exploring the emotions invoked by the climate crises, as it is experienced by sustainability and environmental students at Lund University during their studies, and how they cope with these emotions, using the analytical lens of ER.

To meet this objective, the following research questions (RQ) are examined:

RQ1: What emotions do postgraduate students of sustainability related programs experience due to the focus of their study programs?

RQ2: How well do sustainability students perceive that they are able to cope with these experienced emotions?

RQ3: What type of measures can be implemented to support and protect the mental well-being of sustainability students during their studies?

1.3 Thesis Outline

In chapter two, the thesis begins with a presentation of the concepts of emotions, mental health, and planetary health. The third chapter gives a detailed introduction of the conceptual frameworks applied: resilience theory, emotional resilience, and emotional intelligence. The fourth chapter focuses on the methodology used for this study. Finally, the answers to my RQs are discussed in chapter five, which is divided in three sections: emotions, power over emotions, and responsibility and supporting measures.

2. State of the Art

2.1 The Connection of Emotions, Mental Health and Planetary Health

Impacts of CC are not only leading to direct physical but also to indirect mental harms. Despite the novelty and complexity of studies on CC effects of mental health, it is increasingly acknowledged that psychological well-being is affected in numerous ways (Every-Palmer, McBride, Berry, & Menkes, 2016; Hrabok, Delorme, & Agyapong, 2020; Obradovich, Migliorini, Paulus, & Rahwan, 2018).

Besides more conventional health diseases, a growing body of research shows that increased awareness about CC, environmental changes and losses of species, ecosystems and landscapes can result in mental health distress, confusion and anxieties (Bourque & Cunsolo Willox, 2014; Ojala, 2012; Panu, 2020). The awareness of changing environmental conditions and the correlated triggered mental distress is manifested as "eco-anxiety" or "climate anxiety" (Panu, 2020; Usher, Durkin, & Bhullar, 2019). The complex emotional circumstances and the multifaceted nature of the issue have led to various definition and interpretations among scholars and practitioners (Hickman, 2020).

As defined by Hickman (2020), eco-anxiety includes a relationship between emotional responses to the facts and experiences of the climate crisis together with the knowledge that humans have both caused the crisis and are simultaneously failing to act successfully to reduce it. One can argue that we seem to be extremely causative and helpless at the same time. Consequently, people are developing different emotions when thinking about their personal future as well as the future of the planet as we presently know it (Panu, 2020).

Emotions arise from interactions with people and the environment (Gross & Jazaieri, 2014), and the more powerful such an experience is, the stronger the emotional stimulation will be (Chu & Yang, 2019). With the emergence of emotions coupled experiential, behavioral and psychological responses are triggered and a person thinks, feels, and behaves in certain ways (Gross & Jazaieri, 2014). Importantly, to be emotional does not indicate to be irrational (Scherer, 2011). Much more significant is how an individual deals with emotions in rational ways by making choices about how to deal best with the experience of both positive and negative emotions (Head & Harada, 2017).

How an individual understands the climate crisis arises out of individual processes like concerns, thoughts, feelings, and social processes. There is a complex relationship between CC and an individual's awareness of it as well as how a person responses to this particular threat (Chu & Yang, 2019). Oftentimes, resulting in emotions like distress and anxiety. After becoming aware of the climate crisis, the primary emotion experienced is one of anxiety or panic. However, this feeling often develops

further into disempowering or overwhelming emotions including grief, despair, or fear. People also encounter feelings of depression, numbness, blame, guilt, shame, and powerlessness (Weintrobe, 2013). These experienced emotions can trigger different kinds of responses, reaching from the spur to act to becoming paralyzed, feeling distressed and dissociating with the topic. When faced with such powerful, rapidly moving and often contrasting emotions, moments of denial, disbelief or rejection might occur (Usher et al., 2019).

2.2 Positive and Negative Emotions

The emotions evoked by the climate crisis can be distinguished between positive and negative emotions (Stanley et al., 2021). Regarding environmental issues, emotions like fear, anxiety or worry are often labeled as "negative", mostly as they feel unpleasant for an individual. However, scholars emphasize that these emotions may also have a positive purpose, as they could trigger action and are therefore seen as productive emotions. Therefore, categorizations of "positive" and "negative" should be carefully analyzed (Panu, 2020).

Research has a tendency to compare the effects of experiencing positive or negative emotions, without distinguishing between various kinds of positive and negative emotions (e.g. anxiety, anger and despair were regarded as equivalent emotions) (Wong-Parodi & Feygina, 2021). The dimension of affect is dependent on the degree of pleasure of a certain emotion and the degree of how much an emotion energizes or inhibits action (Barrett & Russell, 1999). Stanley et al. (2021) conclude that while all negative emotions are unpleasant for an individual, the degree of activation, of how much it motivates or hinders action, varies. Less activating emotions result in disconnection and disengagement from an apparent threat, whereas more activating emotions lead to behavioral attempts to minimize the threat. This is often done through addressing or avoiding the threat (i.e. fight or flight behavior) (Carver, 2004).

Importantly, whether the outcome of emotions is positive or negative, can be interpreted differently depending on personal characteristics, goals, beliefs, and acceptable processes for achieving these goals (Lindebaum & Jordan, 2012).

3. Conceptual Framework

3.1 The Concept of Resilience

Resilience is a wide-ranging, constantly evolving theory that has been interpreted and defined in numerous ways. Resilience has been defined as the capability to cope with or recover from adversity, stress, or challenges, and, in the best case, turn it into a positive learning experience (Grafton, Gillespie, & Henderson, 2010; Ledesma, 2014). Resilience allows individuals to resist difficulties or stress (Campa, 2010; Ming-hui & Yan, 2016), sustain well-being and self-esteem (Sharma & Bali, 2013) and enables to come back to the pre-existing state (Gerson & Fernandez, 2013). Grafton, Gillespie, & Henderson (2010) identified three main conceptual streams of resilience in the literature: resilience as a set of characteristics, resilience as a dynamic process, and resilience as an innate life force.

According to Ungar (2006), resilience depends on the individual's family, community, and culture to provide health-sustaining resources through meaningful approaches. Resilience is thus a process that can vary over time and is dependent on context and culture. A person's level of resilience may change in the process of time due to development, different surroundings, and interactions with the environment (Ungar, 2006). Resilience can be circumstantial and dynamic: a person might not be able to demonstrate resilience in all aspects of their live, and different coping mechanisms, social supports or inner resources can activate diverse genetically-determined reactions (Tusaie & Dyer, 2004). Moreover, some resilience resources might be readily available for certain situations but not for others. McAllister (2013) uses the example that publicly acknowledged crises allow for social supports, however, when a situation is associated with stigma or shame, such supports may not be accessible. In that case, resilience might require a coping mechanism of a different extent or quality.

It can be concluded that resilience entails an interaction between a stressor or adversity, the context, the personal characteristics of the affected individual, and the actions towards development and personal growth. The literature agrees that resilience is not an innate characteristic but a person can develop and improve resilience through targeted interventions (Gerson & Fernandez, 2013; Grant & Kinman, 2014).

Brewer et al. (2019) have detected three main interrelated categories of approaches through which resilience can be enhanced: 1) intrapsychic resources – whereby the individual manages their own feelings and thoughts, 2) interpersonal resources – whereby the individual obtains resources, outcomes, or reactions from others, and 3) and contextual resources – whereby changes occur with a strong emphasis on increasing social support.

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3.1.1 Resilience and Education

It is widely agreed on that resilience is an obtainable inner strength, facilitating a positive reaction to stress, and it can be increased or supported by external resources (Grafton et al., 2010; Sterling, 2010; Van Breda, 2018). Studies have been consistently showing the importance of a caregiving relationship for developmental results from early stages of life into older age (Werner, 2013). It needs to be emphasized that not only early childhood interactions, but also current relationships in a person's life belong to vital mediating factors in the face of adversity (Ebersöhn, 2012; Lethale & Pillay, 2013; van den Berg et al., 2013). This abundant indication locates resilience practices not necessarily within individuals but rather within networks of social relationships such as family, friends, or schools (Hartling, 2008).

Universities and educators are assigned with the role to provide a supportive and inclusive environment, enabling students to learn and flourish (Barradell & Kennedy-Jones, 2015). There is increasing acknowledgment among educators that resilience development is a vital skill that can be strengthened during university years (McAllister & McKinnon, 2009; Sterling, 2010) Indeed, a rising number of researchers advocate for the embedment of resilience at the curricular or co-curricular level (Brewer et al., 2019). This makes resilience a key competence that can be cultivated and increased through the educational curriculum by implementing measures that build skills and resources critical for resilience (Stallman, 2011; Turner, Scott-Young, & Holdsworth, 2017). For university students, built resilience could mean a strengthened ability to manage not only academic challenges but also cope effectively with other social, mental, and emotional challenges (Stallman, 2011).

Interventions implemented by a university could focus on individual students' emotional intelligence, coping strategies and thinking (such as growth mindset), or mindfulness practices (McAllister & McKinnon, 2009). While these types of interventions have already shown promise but they ought to be accompanied by other strategies that facilitate social connections (e.g. mentor programs) or equipping students with abilities beyond their studies, to manage the complexities and challenges of the twenty-first century workplace (Brewer et al., 2019). Moreover, it is crucial to make the importance and value of self-care and help-seeking more explicit throughout the study time (Grant & Kinman, 2014).

3.2 Emotional Intelligence and Resilience

In the context of resilience, emotional intelligence (EI) is a frequently discussed feature. The term EI refers to one's ability to perceive, express, understand, and manage emotions; to include emotions into thought; and to acknowledge both positive and negative emotions (Matthews, Zeidner, & Roberts, 2007). Matthews et al. (2007) theorize that EI is antecedent to resilience, meaning that EI contributes to facilitate resilience. As stated by Salovey, Bedell, Detweiler and Mayer (1999), individuals with higher levels of EI are able to cope better with emotional demands of adversity because they can "accurately perceive and appraise their emotions, know how and when to express their feelings, and can effectively regulate their mood states" (p. 161). EI gives a person the ability to buffer the negative consequences of stressful events through emotional self-awareness, expression and management (Armstrong, Galligan, & Critchley, 2011).

EI consists of four emotional skills that are built hierarchically: 1) correctly perceiving emotions; 2) integrating emotions with awareness; 3) identifying emotional sources and consequences; and 4) managing emotions effectively (Mayer, Caruso, & Salovey, 1999; Salovey, Kokkonen, Lopes, & Mayer, 2004). The ability to perceive emotions includes the accurate identification and expression of emotions. Integrating emotions involves shifting emotions to redirect cognitive habits, find new perspectives, and improve problem-solving and creativity methods. Understanding emotional sources entails the skill to comprehend emotional information such as the origins and impacts. Emotional management enables a person to be open to feelings and adapt them to facilitate growth (Salovey et al., 2004; Schneider, Lyons, & Khazon, 2013).

3.3 Analytical Framework

In this thesis, the concept of resilience, with a focus on emotional resilience (ER) and emotional intelligence (EI), will be utilized to analyze the empirical data. Here I define ER following Grant & Kinman (2014) as being a protective factor that generates well-being with linkages to emotional and social competencies. ER is thus seen as having the ability to recover from adversity and react appropriately to difficult emotions and situations. EI is defined as the ability to perceive, express, understand, and manage emotions; to include emotions into thought; and to acknowledge both positive and negative emotions, following Matthews, Zeidner, & Roberts (2007). As Figure 1 illustrates, ER consists of a web of bi-directional relationships between different actors like the individual, the family, the university and more (Masten & Powell, 2003). The model, originally developed by Masten

& Powell (2003), is a useful heuristic for this thesis, especially linked to role of the university in developing ER for its students.

An emotional resilient individual is capable to deal with (negative) emotions, as proven in different study disciplines and learning environments such as social work or health care (Van Breda, 2018). Knowing the strengths of ER and EI makes it an important concept for the analysis of data. By examining the emotions and the power over emotions, this thesis can draw conclusions about the level of ER that students of sustainability programs perceive to have. Moreover, the existing theory on resilience helps to detect potential overlaps for the implementation of support measures, especially within the university environment.

Wider society (Culture, media, global conditions, etc.)

University (university policies, availability of mentors, support services, etc.)

Family (values, norms, expectations, etc.)

influences

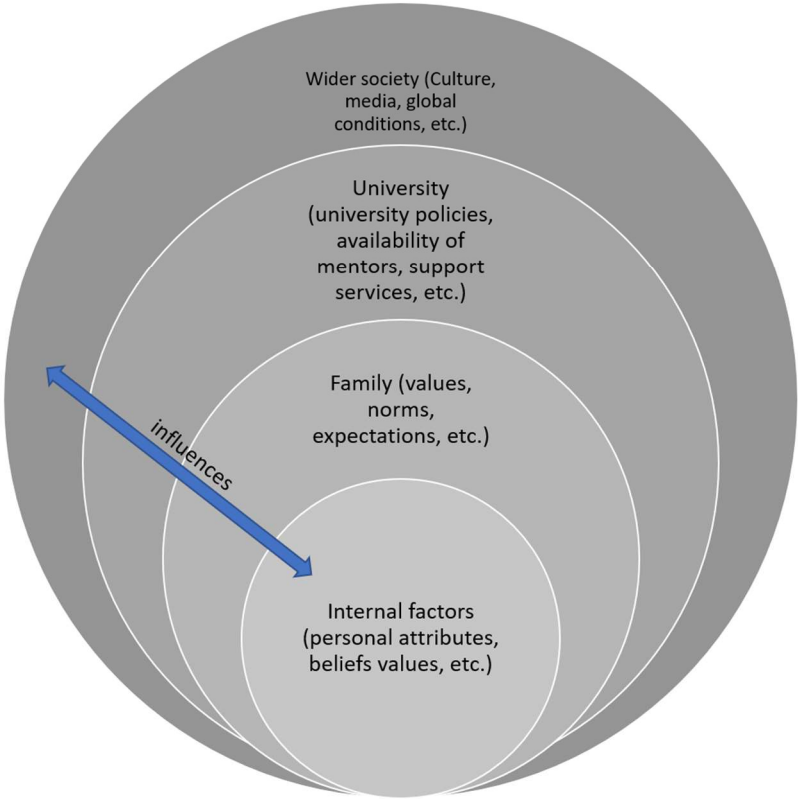Internal factors (personal attributes, beliefs values, etc.)

Figure 1: Web of bi-directional relationships influencing Emotional Resilience between internal factors and external actors. (Source: McAllister & McKinnon (2009), adopted and modified by the author)

4. Methodology

4.1 Research Design

This research project is situated in the critical realism philosophy of science, seeing ontology or reality as being socially conditioned and separate from human beliefs and knowledge (Bryman, 2015). Critical realism accepts the reality of the social world regarding its social structures and discourses. It acknowledges that the researcher's position is influenced by own world views, cultural experiences and education (Bryman, 2015). Therefore, it needs to be acknowledged that these conditions shape the outcome of my research through my interpretation of data.

The thesis uses an explanatory sequential research design, applying a mixed methodology approach (Bowen, Rose, & Pilkington, 2017), with emphasis on the qualitative methods. The systematic combination of quantitative and qualitative data within this study enables the combination of the strengths of quantitative and qualitative research, merging findings with data gained from different situations and times (Alhojailan, 2012; Griffin & Ragin, 1994). The collection of sequential quantitative and qualitative data for the analysis combines two types of information, offering a better insight into the research (Almalki, 2016). According to Johnson & Onwuegbuzie (2004), a mixed methodology enables a more expansive and creative approach to the investigation, helping to gain a greater understanding of a topic area. The approach can enhance confidence in findings, increase the amount of evidence and compensate for potential weaknesses from using a single approach (Bryman, 2012; Caruth, 2013). The research follows an inductive analytical approach, since the main aim is to draw generalizable conclusions out of specific observations that are gained through the collected data (Flick, von Kardorff, & Steinke, 2004).

The study is divided into two separate phases. In phase 1, quantitative data was collected, analyzed, and evaluated, with the goal of identifying what kind of emotions environmental students are experiencing, whether negative emotions are present and if students feel supported by their classes to deal with their emotions. Phase 2 involved coordinating and conducting interviews, to deepen quantitative data findings and triangulating it. The results of phase 1 were used as foundation to guide the design of the interviews, while the qualitative data helped to contextualize the quantitative results.

4.2 Sampling Strategy

The study unit population was limited to current sustainability and environmental students at Lund University (LU). The first step included the identification of relevant master's programs at LU, derived from the LU website. Table 1 shows the master's degree programs including the number of active students that were part of the population:

Table 1: Master's Degree Programs and Number of Active Students

Master's Degree Program at LU	Number active students
Disaster Risk Management and Climate Change Adaptation	44
Environmental Management and Policy	55
Environmental Studies and Sustainability Science	125
Human Ecology - Culture, Power and Sustainability	48
Innovation and Global Sustainable Development	41
Water Resources Engineering	28
Applied Climate Strategy	Unknown

For phase 1, a non-probability sampling method was chosen to get an initial understanding of the researched population (Etikan, 2017). More precisely, a purposive sampling method was applied, since the population is rather small and specific and the aim was to gain detailed knowledge about a specific phenomenon (Guarte & Barrios, 2006).

The goal for phase 2 was to obtain several deepened "insider views" from the studied group. Since the aim was to further develop the initial understanding of the sample group and to ensure a wide variety in regards to the different master programs, a maximum variation sampling method was applied for phase 2 (Bryman, 2012). Maximum variation samples are applied for the purpose of documenting distinct variations that might occur due to the adaptation to different conditions (Palinkas et al., 2015). Since the master's degree programs have different foci on sustainability and are either solution-oriented or problem-oriented, this sampling method was very suitable. Consequently, at least two respondents from each master's program were contacted and invited to participate in the interview.

4.3 Research Quality Criteria

Quantitative Study

Quantitative studies operate on the condition of an objective reality through preserving the researcher as neutral as possible and evading human bias when possible (Antwi Kwadwo & Kasim, 2015). For the data collection a standardized questionnaire was utilized, with the questions being partly based on pre-existing measurements (see Kelly, 2017) and partly on existing findings of other studies (e.g. Putwain, 2007; Verlie, 2019), ensuring reliable and valid results. Furthermore, the clear definition of the researched population backed valid and generalizable results. Through means of an online surveys, the researcher could not influence respondents while they answer the questionnaire. The procedure of investigation is explained in detail in this thesis, allowing for replication by others.

Qualitative Study

While quality criteria for quantitative research are well known and commonly agreed on, no universally applicable criteria exist for qualitative research. Yet, there are more frequently used quality criteria which are deemed valid for qualitative research (Bryman, Becker, & Sempik, 2008; Guba & Lincoln, 1982). Credibility, meaning the trust in the truth of the results, is ensured through the implementation of two different data collection methods, offering a comprehensive understanding of phenomena, also called triangulation (Carter et al., 2014). Furthermore, the dependability and confirmability shall be secured by having an interview guideline and the recordings of the conversations (Guba & Lincoln, 1982). However, the attitude of the researcher towards the topic might also influence the answers and thus the results. Since I am not only the acting as the researcher, but I am also an environmental and sustainability student, it was important to disregard my own opinion and experiences within the topic. The recorded conversations support the guarantee of non-biased findings.

4.4 Data Collection Process

Quantitative Study

For the collection of the quantitative data, an online survey was conducted. After the identification of the relevant master programs at LU, the respective student coordinators were contacted to enable the distribution of the link to the survey. Additionally, also student representatives were contacted, and

the link was posted on Facebook groups to increase reach levels. This enabled the accessibility to the survey through several channels.

The questionnaire consisted of 13 items (see Appendix A), primarily containing closed questions and two open questions giving respondents the possibility to further elaborate on thoughts. The survey was designed to take around 5 minutes to complete. The survey was available between February 5th and February 21st and a total of 158 participants has filled out the survey. 18 participants needed to be removed due to missing completeness. This led to a total sample of 140 valid respondents.

Qualitative Study

The findings of phase 1 served as foundation for the second phase, since the results clearly influenced the direction of the interviews. Building on the results of phase 1, semi-structured interviews were conducted. The interviews focused on further examination of the origin, role and effects of the emotions and feelings of environmental students and what they perceive to be needed to cope with emotions effectively during their studies.

At least two respondents from each master's program were contacted and invited to participate in the follow-up interview. The interviews were conducted through the online platform 'Zoom', a method which can effectively imitate face-to-face interviews (James & Busher, 2012). Before the start of the interview, participants were informed about the research purpose, that the information was gathered for the purpose of the research, and they gave consent that the interviews were recorded.

The interview guideline consisted of 12 questions (see Appendix B) and the interviews were designed to take around 20 minutes. Due to the fact that the interviews only required a short time, a greater number of interviews within the data collection period could be carried out. In total, 12 interviews were conducted and most of the interviews were around 20 minutes, a few were shorter. Most interviewees seemed very willing to open up to me, engage in the topic, and answer the questions in more depth.

4.5 Data Analysis

Quantitative Study

Since the qualitative study served as pre-study to detect different phenomena and tendencies in regard to emotions of environmental students, the quantitative analysis was based on descriptive statistics. Descriptive statistics are used to describe the characteristics of a group, make generalizations about a larger population, and show quantitative descriptions in a convenient form (Fisher & Marshall, 2009). The utilized online tool for the survey umfrageonline.com enabled the presentation of the descriptive data in a convenient way by creating visually appealing graphs and charts. This made the analysis of quantitative data easy and different trends and patterns could be identified effortlessly.

Qualitative Study

The qualitative analysis of the content uses inductive reasoning, basing the examination of specific themes as well as the conclusions drawn from them in the data. The process involves the conversion of raw data into categories, based on valid interpretation and assumption. Through inductive reasoning, the categories result from the data through the examination and comparison of content (Zhang & Wildemuth, 2009). The analysis follows the approach of the directed analysis of content. Hereby, the initial coding starts with important research findings and the relevant theory and the aim is to validate or expand the applied theory (Hsieh & Shannon, 2005).

The data analysis was supported by the coding software NVIVO. I structured the analysis according to the process of qualitative analysis of content by Hsieh & Shannon (2005). Step one involved the transcription of the interview data, including sounds, pauses or other audible behaviors. In step two, I developed the categories and a coding scheme relevant to the RQs. The categories were derived from the empirical data, prior research, and theory. Appendix C shows the structure of the content analysis and the coding frame, describing each code in more detail. The next step involved the coding of the entire text. Since I started the coding while I collected further data, new themes have emerged throughout, which were added to the coding scheme. The fourth step included the re-assessment of the consistency of coding, whereby the entire material passed another coding cycle. This step was important since human coders are likely to make mistakes through the coding process, and it needs to be ensured that the coder's understanding of the categories have not changed over time (Zhang & Wildemuth, 2009). Step five involved drawing conclusions from the coded data. Hereby, the aim was

to identify relationships between categories, uncover certain patterns, and themes that reflected the importance to the social reality of the interview participants.

4.6 Scope and Limitations

The research project boundaries were set by including only currently active environmental and sustainability students of master's programs at LU. The researcher identified relevant master's programs making use of the classification on the LU website: master's programs within the subject area of environment and sustainability. The study only separates between the gender of the students, not by their origin or nationality.

A purposive sampling was chosen, based on the ease of access to environmental and sustainability students. While the sampling method allows for insights into the topic, the representativeness is limited since the people who respond to the survey are more likely to have strong(er) opinions about the topic, potentially excluding the opinions of students who did not take part in the survey (Stanley, 2015). Furthermore, it needs to be acknowledged that representativeness of the survey is limited. A common phenomenon for online surveys is the non-participation of male respondents (Dewaele, 2018) and the early termination of the survey (Solomon, 2001), both was observed in this survey as well. However, the quantitative survey was mainly employed to see the distribution of answers and frequency count, serving as a foundation to guide the design of the interviews.

Furthermore, participants were made aware of the current COVID-19 pandemic and its impacts on our lives and routines in an attempt to omit those emotions from the emotions linked to their studies. I reminded participants that, while completing the survey, it was important to relate to the questions as unattached as possible from the effects originating from the implemented pandemic measures that might currently influence their education. Yet, since the pandemic contributes to widespread emotional distress and increased risks of anxieties (Pfefferbaum & North, 2020), it needs to be acknowledged that these negative emotions could influence the research results of this study.

4.7 Positionality and Reflexivity

Being a student studying environmental and sustainability issues myself, has two impacts on the research. First, compared to the other master's programs, the program I am part of showed a higher number of survey participants. This could potentially be due to the existing relation with the people I

am studying with. Second, having a strong relation to the thesis topic myself helped me to be closer to the interview participants, and being "one of them" allowed the interviewees to feel safer and more comfortable which could potentially have positive influences on their truthfulness concerning the interview questions. However, my own experiences have also influenced the data analysis, especially the interpretation of different emotions and their positive or negative impacts. Qualitative research is interpretive, and the interpretation represents the subjective and theoretical understanding of the studied phenomenon (Zhang & Wildemuth, 2009). Hence, the analysis cannot be completely objective. I also have my own experiences with (negative) emotions in relation to the focus of my study program which also made it important for me to reflect on my own standpoint throughout the thesis process, while simultaneously attempting to stay as neutral as possible during the interviews to limit these emotions influencing the interpretations of the data.

4.8 Ethical Consideration

Due to the in-depth nature of the study process of qualitative studies, the protection of human subjects through ethical considerations is particularly important (Arifin, 2018). The study aimed to abide the ethical principles of (a) minimizing the risk of harm; (b) obtaining informed consent; (c) protecting anonymity and confidentiality; and (d) providing the right to withdraw (Baserer, Baserer, & Akcan, 2016). Therefore, study participants have been informed about the ethical principles and the purpose of the research twice: first, when date and time of the interview were scheduled and second, directly before the beginning of the interview. Attention has been called to the emotional aspect of the research, the consent for the participation and the voluntary participation, the right to stop the interview, and participants were ensured that their answers are anonymous and strictly confidential.

5. Findings and Discussion

5.1 Emotions

The majority of students who participated in the study state that they feel more negative emotions than positive ones linked to the environmental issues they learn about in their studies. Some students emphasize however, that their emotions often depend on the context, and that the general tone of positive or negative emotions fluctuates throughout time.

The positive emotions experienced by students linked to their studies involve emotions like **hope, purpose, motivation, excitement, and interest**. Most students experiencing these positive emotions more frequently are largely participating in programs with a more solution-oriented focus (e.g. Applied Climate Strategy or Environmental Management and Policy). Some of these students explain having these positive emotions as being directly linked to their continued belief that there is still hope to address the environmental problems in the world and they are eager to be part of the solution. This also led them to the decision to study an environmental and sustainability-oriented master program.

For the rest of the respondents however, the emotions most frequently experienced when thinking about the focus of their study programs are largely negative.

These negative feelings, experienced by the majority of the participants include emotions of **anxiety, pessimism, anger, sadness, frustration, powerlessness, being overwhelmed, exasperation, hopelessness, exhaustion, disappointment, uncertainty, guilt, fear, and dread**. Overall, the results indicate a much larger range of negative emotions compared to experienced positive ones. This result is similar to other studies, indicating that young people who show an interest in global issues often experience negative feelings and are rather pessimistic and feel helpless about the future (Fleer, 2002; Ojala, 2012).

This finding is also supported by the quantitative survey. Figure 2 shows the emotions that the respondents encounter when thinking about environmental issues. To be able to identify the strongest emotions felt, respondents could choose a maximum of three emotions. Being overwhelmed is indicated most often, followed by purpose and anger. When dividing the range of emotions identified by students, following Solomon & Stone (2002), of positive emotions (hope, motivation, purpose, inspiration, excitement) and negative emotions (vulnerability, anger, grief, anxiety, despair, stress, burden, feeling overwhelmed), students selected positive emotions 133 times, while negative emotions were selected twice as many, 266 times. Since the feeling of overwhelm is identified the most by respondents, it is worth examining this emotion more closely.
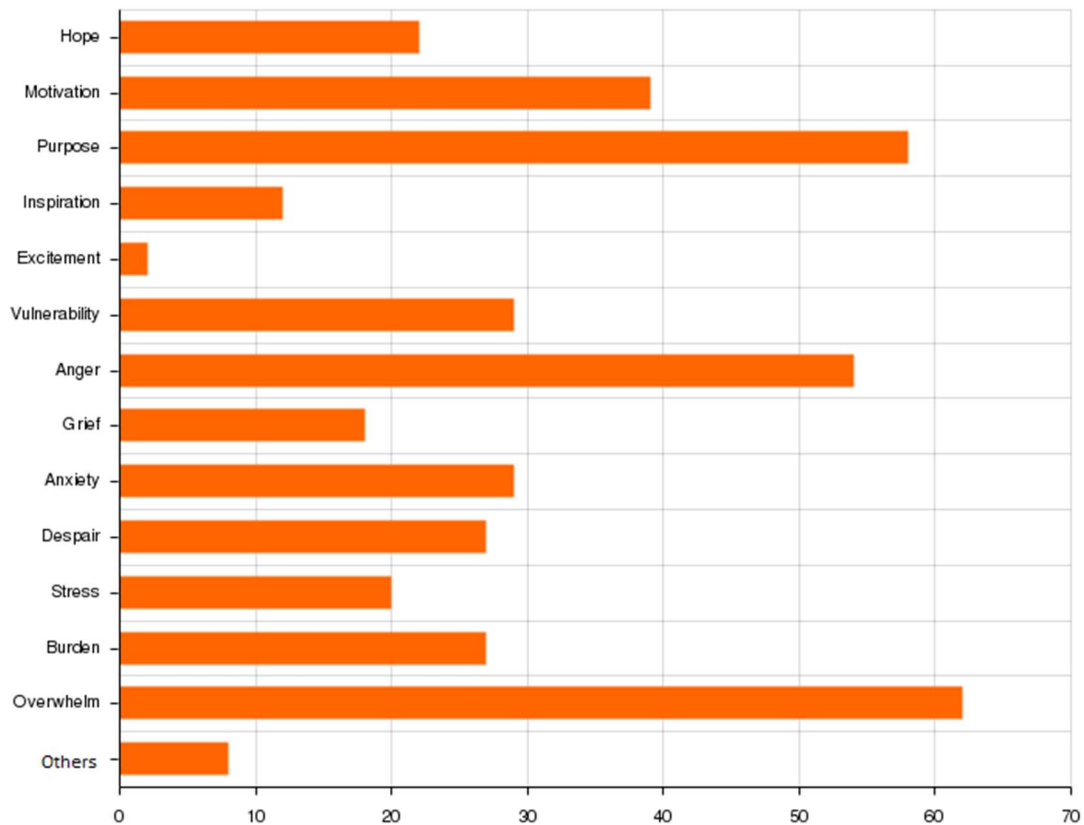
Figure 2: Experienced emotions felt by students when thinking about environmental issues

As outlined by Kabigting (2019), the emotion of being overwhelmed can a) emerge as an overcoming turbulence, b) surface with disquiet isolation, and c) arise with reaching for relief. Feeling an overcoming turbulence might appear with loss of cognitive and bodily control. Negative emotions like stress or anxiety are defined as natural responses to threatening situations but when feeling overwhelmed, people show difficulties in thinking, irritability, and emotional irritations (Bortolotti & Miyazono, 2016). Furthermore, people being overwhelmed are often described as being helpless or powerless (Kabigting, 2019). The feeling of powerlessness has also been described by one interviewee:

> *"I think it's often because I don't know what to do ... at the moment to change something. So, we're all sitting in front of our screens and it's amazing that we're learning so much and I think is really important at the moment, but like, how do you actually change it now? ... So, I think it's a feeling of like not being able to really do anything about it." (Female student, Human Ecology)*

Another aspect of being overwhelmed involves searching for relief by making active choices to be able to cope with the feeling (Kabigting, 2019). Consequently, being overwhelmed by environmental issues can result in an absence of individual action or in a disconnection and disengagement with the field to

get relief (Carver, 2004). Studies have revealed the risk of burnout of environmental activists due to experiencing negative emotions, including the constant feeling of being overwhelmed (Gorski & Chen, 2015). It can be presumed that environmental students show comparable traits and values to environmental activists, increasing the risk for similar consequences that negatively impact the mental health and sustainability of students. This shows the need to further examine what other actions are triggered or prevented by experienced emotions.

5.1.1 Positive and Negative Impacts of Emotions

Interviewees indicate that the eagerness to study their respective master's degree program stems from their emotions. Others state that their emotions lead them to change their consumption behavior (e.g. eating less meat, becoming vegan, using less plastic); their travel behavior (e.g. taking the train instead of the plane, not considering certain holiday destinations); or rethink other attitudes towards living (e.g. re-considering to have children, taking a conscious decision regarding the future place to live and work, surrounding themselves primarily with like-minded people, or being politically active). One student stated:

> *"I don't think necessarily that the anxiety itself has stopped me from doing anything.*
> *It's more, it's driven me to action, and less to apathy" (Female student, Environmental*
> *Management and Policy).*

These positive impacts are not surprising since various emotions evoked by environmental issues often trigger greater engagement of both individual and collective pro-climate behavior (Stanley et al., 2021). Individual factors like environmental values, connectedness to nature, or a better awareness of environmental issues predict CC action (Nicholas, 2021; Wang, Leviston, Hurlstone, Lawrence, & Walker, 2018). Naturally, and like demonstrated by the findings, students who are studying environmental and sustainability related programs tend to evince these factors and align their behaviors accordingly.

However, other interviewees state that their emotions are prohibitive to action. Negative feelings like anxiety or being overwhelmed by the scope of the problem result in a thinking that no matter how much is done, they will not be able to solve the problem. This highlights the previously mentioned risk of students disconnecting with the topic or giving up on implement environmental actions (Gorski & Chen, 2015).

Moreover, one interviewee pointed out that the feeling of powerlessness has led him to not execute substantial changes in his own behavior, although he is aware that his actions might harm the environment:

> "I think it's maybe more things that aren't triggering through powerlessness. So, I think one, one example is travel and downhill skiing and other, like, I know it's bad for the environment but I'm going to do it anyway because what's my impact gonna have really? It's just, just one me doing it. … Even if I didn't do it, I don't have much power to change the whole thing." (Male student, Disaster Risk Management and Climate Change Adaptation)

Oftentimes, people who are active in environmental work try to stay positive and remain defiant by temporarily muting global challenges linked to environmental issues and focus on what one can control with their own behavior (Driscoll, 2020). This is also described by a student:

> "I kind of went through a stage … where I kind of really like immersed myself in all the terribleness and then I kind of felt … I want to be more part of solving it rather than just worrying about it. And so now I feel like there is no point in me watching or hearing or reading more about the issues. It's like I sort of know that they exist. And now I want to know how we can solve them or how I can be part of solving." (Female student, Environmental Management and Policy)

One interviewee states that she restricted her consumption to a point until she realized that it was not good for her anymore. Another student reports that she wants to change the fact that she was distancing herself from people who have a different point of view on sustainability issues. These assertions indicate that some students put sustainability, pursued through pro-environmental behaviors, above their own well-being.

5.1.2 Emotions and Legitimacy

It is recognizable that students often have entirely different attitudes towards the legitimacy and role of emotions. Here, gender and attitudes towards emotions and personal issues within the master program play an influential role.

For instance, one student (Male, Water Resources Engineering) had difficulties naming his experienced emotions when thinking about environmental issues. Instead of identifying emotions, he lists facts about environmental issues, which, in his opinion, are not addressed sufficiently. In contrast to that, another student (Female, Environmental Studies and Sustainability Sciences) talks about emotional concepts, the importance of being close to one's emotions, and she openly talked about crying and

how she explicitly addresses her emotions. This raises the question whether women possess different emotional abilities then men. Indeed, a literature review conducted by Grossman & Wood (1993) on Emotional Intelligence (EI) revealed that there are significant differences between women's and men's emotional abilities. Consequently, women experience both positive and negative emotions more intensely compared to men. Research shows that while women obtain an education emphasizing emotional aspects, men are often taught to minimize emotions like vulnerability, sadness, or fear (Chaplin & Aldao, 2013).

However, it is important to point out that gender by itself does not have sole explanatory power but much rather operates in interaction with additional variables. Hence, when examining the development of a person's EI, gender needs to be linked with other factors like age, socio-cultural factors, ethnicity, and socioeconomic levels (McIntyre & Edwards, 2009).

The second important finding relates to the attitude towards emotions exiting within the master's program. One student referred to the issue that he does not feel like he can address emotional issues within the environment of the master's program. He states:

> *"A lot of the need is just around, making it feel okay to have that conversation with your peers and setting that mood. … So, I look to professors and PhD students, and other people like that who are in that kind of role of: How do we talk in this program? Do we stay professional? Do we stay personal? What's the balance? Because I think a lot of the actual support that I would want is being able to have that open dialogue with peers. But somebody needs to set that as acceptable." (Male student, Disaster Risk Management and Climate Change Adaptation)*

This aspect of legitimacy of emotions has also been verified by other studies (e.g. Head & Harada, 2017), where it was found that within academia, emotions are often still separated from scientific and rational concerns and that scientists are expected to distinguish their feelings from their work.

While a constantly increasing number of studies indicates that EI contributes to work performance and increases skills needed for teamwork (Cherniss, 2001; Jordan, Ashkanasy, Härtel, & Hooper, 2002; Watkin, 2000), these results show that there is still a need to further understand the necessity of talking about emotions and acknowledge the assets of EI. This is also witnessed in the professional world, where people might be asked to maintain a professional identity and not show emotions in the professional workspace. This challenge is deep-rooted in western social norms where people are expected to separate their private life, emotions, and femininity from public life, rationality, and masculinity (Bauer & Murray, 2018).

As the previous quote indicates, this is also displayed at LU, as professionalism and talking about emotions are perceived as two distinct things. Yet, as the previous findings have shown, especially in the field of environmental and sustainability sciences, many (negative) emotions arise naturally, making it even more important to address these emotions explicitly and support students to deal with issues – now and in the future when working.

Some students describe the environment in the master's program to be open when it comes to emotions. Still, most respondents perceive the approach towards emotions and well-being from their master's program as insufficient. As proposed by Mendonça (2009), being able to talk about emotions, having the ability to describe situations or being able to identify why we feel a certain way enables individuals to better grasp, discover, and maintain emotional processes. Looking at the concepts of EI and ER gives a clear indication of the benefits, such as higher a capacity for self-awareness, the ability to control and regulate emotions, the power to motivate oneself, and the ability to sympathize with others and deal well with relationships (Schneider et al., 2013). To achieve this, individuals need to be able to manage their emotions effectively. Hence, the next section investigates how well students perceive that they have power over their own emotions.

5.2 Power Over Emotions

The majority of interviewees states to not have a lot of power or control over their emotions, and that especially negative emotions are hard to control or to counteract. Some students report that they are trying to work on their emotion management, aiming to allow and be at peace with emotions, but this is an ongoing process taking a lot of time, energy and depending strongly on time and context. As one student states:

> *"At times I feel like I do have power. And then I feel like I don't at all. I think it's definitely easier during the daytime, to kind of rationalize my emotions, and really decide … that I cannot be carried away by my emotions. But then … it's something that I see, like a documentary or a clip or, you know, I read something in the news. And then again, you know, this frustration from the universe that … we're still going in the wrong direction hits. So, I think it's more like that, even though I do, knowingly, try to keep my emotions in order not to freak out all the time, when I'm, you know, doing my study program. Even though I'm kind of like trying to manage my emotions, it's still super easily influenced by, you know, all the media and social media and like opinion articles, and wherever, you know, information comes. So, it's, I would say, it's very fluctuating."*
> *(Female student, Environmental Studies and Sustainability Sciences)*

The response shows that some students seem to lack resilience when it comes to their emotional abilities. It has become apparent that emotions can be obstructive and can negatively affect a person when they are the wrong type, they appear at the wrong time, or they are experienced at the wrong intensity level. In such times, a person may be highly motivated to regulate their emotions (Edward & Warelow, 2005).

The need for building resilience seems particularly important for these students, given the high rates of negative emotions they experience, combined with the low level of power over their emotions. Particularly, as the stressors of being a student are intensified through personal events, relational stress, financial pressures, academic stress as well as concerns about the life after studies (Putwain, 2007). This is also confirmed by one student:

> "I mean, yeah, we all deal with it with it very differently, I guess, because we also have other things to deal with, and a past that's obviously influencing how we deal with things." (Female student, Environmental Studies and Sustainability Sciences).

It has become evident that some students are strongly emotionally affected by their studies and this was released during one interview when an interviewee has an emotional release and starts crying during the interview, while talking about environmental issues and their impacts on her well-being. The student explains that she generally cries a lot and that she does not consider crying as something negative. Yet, she is caught by surprise from her own reaction at the moment of the interview.

This study confirms that being an environmental and sustainability student can be a turbulent process, where many are experiencing being put outside one's own personal comfort zone (Wamsler et al., 2018), frequently being confronted with distressing topics (Hayes, Blashki, Wiseman, Burke, & Reifels, 2018), one's personal values are being challenged, and one's personal and professional boundaries are questioned (Warren Brown & Kasser, 2005). To build ER can help students to adjust positively to stressful circumstances, manage emotional challenges, adopt effective coping strategies, and improve an individual's well-being and professional development (Grant & Kinman, 2014). Individual resources play an important role for enhanced ER (Grant & Kinman, 2014) and the next section will examine this in more detail.

5.2.1 Self-Care & Personal Coping Strategies

It is evident that, due to the focus of their studies, environmental and sustainability students are more prone to mental health problems, just like other students such as social work or health care students

are, and a failure to look after oneself can result in negative consequences (Ungar, 2006). Research shows that promoting the need for self-care will increase an individual's well-being and ensure longevity throughout their studies or in their profession later (Rajan-Rankin, 2014). Generally, within the environmental and sustainability area, self-care or the prioritization of one's own well-being is often considered as egocentric or irrelevant next to the "real struggles" that are addressed with one's work or study (Bobel, 2007; Rodgers, 2010). While this study did not focus on the concept of self-care per se, it is evident that self-care plays a vital role to sustain one's mental well-being (Boellinghaus, Jones, & Hutton, 2014).

When students are asked what kind of coping strategies they apply that sustain their emotional well-being, nearly everyone states that talking to other people like family, friends or fellow students helps them cope with their emotions. Whether it is to talk to individuals that experience the same difficulties, talking to someone who has a different perspective on things, or to be able to switch one's thoughts to something completely different. Next to that, sport activities, yoga, meditation, being in nature, and healthy nutrition have been mentioned frequently as helpful preventative measures to avoid psychological unease. The literature frequently views practices of mindfulness and closeness to nature as popular interventions for the treatment of psychological difficulties by strengthening metacognitive abilities and by improving features related to emotion, health, and illness (Hamilton, Kitzman, & Guyotte, 2006).

Some interviewees said that it helps them to be close with their emotions: crying, "letting it out", and accepting the negative emotions they are facing. One student went to the forest where she was alone and then screamed – letting out her anger and frustration. ER shows that accurately perceiving and accepting emotions is the first state to effectively regulate mood states (Armstrong et al., 2011).

Others reported that they try to not connect with their emotions all the time since that would be too exhausting. Some students mentioned avoidance, stopping to think about the issues, or not dealing with more issues as coping mechanism:

> *"I think that, like, I have the power to just sort of say, okay, no I'm not going to, like, watch that documentary, I'm not going to read that because that's gonna make me feel anxious and stressed and I don't need to feel that because I already know it's a problem. I don't need to, like, feel it more so. And I don't know if that's, like, I don't know if that's kind of shutting off, or if it's a sensible coping mechanism to kind of deal with not feeling too overwhelmed too stressed." (Female student, Environmental Management and Policy)*

Some interviewees describe that focusing more on solutions instead of problems and to not thinking long-terms but rather concentrating on the present or the near future helps them cope. While for others it helps more to focus on the long-term future since they link that with having more impact and control (e.g. when working) compared to being a student. This tendency is also shown by research, which indicates that more problem-focused coping mechanisms affect a person's everyday life negatively, while more meaning-focused coping methods are related to higher well-being and optimism (Ojala, 2013).

Further, collective student initiatives are seen as another way to address mental well-being, climate anxiety or similar issues. But it is highlighted that such initiatives are difficult to keep running since it requires a lot of time to organize, possibly creating additional stress for students in charge. This indicates that there is a need for well-organized and structured initiatives where topics concerning mental health are explicitly addressed.

While these findings confirm that students already engage in a variety of personal coping mechanisms, this is not sufficient. Next to individual resources also interpersonal and contextual resources are required to build ER, especially through relationships with other people and social support (Brewer et al., 2019).

This becomes even more important for people dealing with environmental issues, since coping mechanisms do not only relate to handle threats to one's own well-being, but also to handle threats to the well-being of others (e.g. current and future generations) as well as threats to the planet. Therefore, it is important for individuals to learn how to fruitfully deal with other-oriented worries, or else there is a risk that these worries transfer to self-focused worries and people become passive (Ojala, 2013). External actors can actively support this aim by transferring the knowledge about different coping strategies to increase subjective well-being. The next section will focus more in detail on how external actors can support students' mental well-being during their studies.

5.3 Responsibility and Supporting Measures

Before discussing existing and future supporting measures to improve the ER of students, it is critical to identify who the students themselves perceive to be responsible for giving them external emotional support.

5.3.1 Who is Responsible?

Studies show that EI and resilient behavior can be established and significantly improved through support and education (Sterling, 2010). As argued by Van Breda (2018), building resilience requires an interaction between an individual and the wider environment around. Since factors that increase resilience can be divided into intrapersonal and environmental factors (Edward & Warelow, 2005), it is vital to include the university and other closely operating actors to identify potential support measures. Through supportive supervision and emotionally sustaining cultures students can learn empathy, reflection, and mindfulness, recognize early signs of stress and burnout, and sustain their overall well-being.

Many interviewees consider the university as a whole to have great responsibility to support students who experience negative emotions. Yet, some students are unsure where to put the accountability and how to define clear roles:

> *"I think actually the university has a big responsibility and I think they're not taking the responsibility because it's so easy to tell people okay, like, this is the, the knowledge we have for you. So, like, but then they just leave it with you, right. So, I think the university has to be, and I'm not even sure whether they are that aware because, because who is the university right? I mean you have to ask that question. I guess our supervisors, is that the university? Because they are like mostly responsible for us. Or is, like, an even higher, like, I don't know, responsible coordinator whatever who, like, from the university or is it the mental health center?" (Female student, Human Ecology)*

Students view the university as knowledge mediator, but consider it essential that the university takes an additional step by providing social support for students. The university can provide different types of social support, including emotional, instrumental, informational, and appraisal (Wilcox, Winn, & Fyvie-Gauld, 2005). The finding is in line with other research that shows that the university and educators have a role to provide informational and emotional support for students and need to find a balance between those types of support (Malecki & Demaray, 2003).

One student saw the responsibility laying within the faculty and the lecturers, by transferring optimism through their teaching and conveying to believe in social change themselves. She states:

> *"I do not put that on the university, I put that on the professors. … I do think that when you have professors that you enjoy, or who are teaching these subjects and you realize that they've been around even longer. They've been frustrated even longer, and they still are optimistic and positive about what can be done moving forward, and that part of that optimism, or the people who are sitting in the class, then that can be inspiring*

and a reminder, as well." (Female student, Disaster Risk Management and Climate Change Adaptation)

Again, we see parallels to other research that shows that educators need to develop social and emotional literacy skills (Kassem, 2002). Notably, students see their lecturers as role models, and they see the lecturers' experience as valuable resource to generate positive emotions from. Yet, it is vital to better prepare lecturers with specific emotional knowledge and skills to deal with students that suffer from negative emotions. If the aim is to generate and implement emotionally intelligent learning environments, lecturers need to be well-equipped with social and emotional skills (Hen & Sharabi-Nov, 2014). This is important since lecturers are not necessarily trained to handle mental health issues of students or to effectively approach emotional issues and will therefore need support as well (Johnson, Eva, Johnson, & Walker, 2011). One option for emotion education for educators is defined as school-based social and emotional learning (SEL) whereby education programs address 1) the role of emotions in learning; 2) emotional 'translation' abilities; and 3) ways to address and solve real-life, social-emotional problems (Elbertson, Brackett, & Weissberg, 2010). It is also found by Hen & Sharabi-Nov (2014) that increased emotional awareness among lecturers can, in turn, influence students positively and lecturers can provide a guidance for students to appropriately perceive, identify, and act upon emotions.

Yet, another student does not see the responsibility with lecturers, as she states:

> *"I mean of course they should know or be able to tell the student, like, this is the way to get in contact with students help. Of course, I hope, my faculty is aware of that. But like more on, I mean they're scientists, they aren't like "teacher teachers". So, it feels weird that they should be competent in like psychology to environmental studies." (Female student, Applied Climate Strategy)*

Instead, this and other students see the need for a third-party counselor, someone being trained in psychology or a similar field and can deal with emotions, anxiety, or mental health issues and thereby putting responsibility on the health care system. Hereby, it is important for psychologists to correctly diagnose students and care for the negative consequences in appropriate ways. Psychologists are already more aware that CC is putting a strain on peoples' mental health, and some are rethinking their practices and treatments accordingly (Bourque & Cunsolo Willox, 2014). Still, mental health issues connected to CC is a rather newly emerging issue and it has only received little attention in policy and health needs, funding, and research are not addressed adequately yet (Berry, Waite, Dear, Capon, & Murray, 2018).

Furthermore, some students mention that initiatives should come from students who are interested in the topic. Thereby, external actors are not essential as they prefer to exchange experiences and talk to people who encounter similar issues. As it was seen from other findings, such initiatives are already implemented in some master's degree programs. However, the students who led such a project claim that they feel left alone and that the additional task result in even more stress for themselves.

In summary, students perceive that responsibility to ensure emotional support to be split between the university, the faculty including lecturers, and external actors like experts on mental health and climate anxiety. The next section will examine the supporting measures that are already implemented, followed by potential response measures that can be executed in the future.

5.3.2 Current Supporting Measures

Some students state that the solution-orientation of their master's degree program makes them feel supported since this approach triggers more positive emotions. One student who studies a solution-oriented master mentions that the program explicitly addressed the possibility of students experiencing negative emotions when constantly talking about the problem-side which is why they put emphasis on solutions in the program. Knowing that the program had thought about this issue when designing the courses gives her a better feeling. It is also reflected in the literature that people who can focus on solving a problem are better able to move from hopelessness and despair towards a feeling of empowerment (Fritze, Blashki, Burke, & Wiseman, 2008). The findings indicate parallels, since students whose master's programs are more technical and/or solution-oriented generally consider this as support measure.

Importantly, nearly all students state that their program has not explicitly talked about emotions or mental well-being related to environmental issues. Still, it can be seen that students consider their lectures as vital source for the occurrence of either positive or negative emotions. One student states:

> *"Some do a better job than others of pushing students to address their emotions. One class is doing that right now, trying to get people to see the optimistic side and see that their, see their power and being changemakers." (Female student, Disaster Risk Management and Climate Change Adaptation)*

Another student reports about her experiences as follows:

> *"I remember [one] lecture about why everything is shit. And [one] course, which really leaves you with 'Wow, this is so shit.' But there was nothing after that kind of gave hope. … Something that personal contribution also matters and there is hope and you*

can do something as an individual. … I didn't feel encouraged as well as an individual,
I think." (Female student, Environmental Studies and Sustainability Sciences)

It needs to be emphasized that according to most interviewees, even though Lund University provides mental health services and counseling for students, they would welcome further initiatives introduced by their master's program. Building on this, the next section highlights suggestions to improve current supporting measures and develop new ones.

5.3.3 Improving Existing Supporting Measures and Developing New Ones

One re-occurring response measure was that the faculty explicitly starts talking about emotions, making students aware and preparing them for the possibility of the emergence of negative emotions.

> *"Offering something … during the first year some sort of like, mindful space, where it just, you know, being aware what kinds of emotions might come up over the course of this study. And to make sure that we're prepared mentally and we know what to expect and that that we should reach out if we are in need for help. … They really emphasized that we are diverse … we have to be mindful … and really help out. But if there had been, like in addition, something that, you know, we might start experiencing climate anxiety and eco grief then I think it would have also been really helpful." (Female student, Environmental Studies and Sustainability Sciences)*

Possibly, this supporting measure can be implemented the easiest way. Especially since some students think that the master's program is already creating an environment advocating for team spirit and inclusiveness through events for first-semester students. The aim to openly address emotions, negative feelings, and the importance of mental well-being within academia is also reflected in the literature. Smith & Ulus (2020) have criticized the prevailing discourse about academics' well-being, indirectly burdening people to be responsible for their own suffering and producing walls of shame instead of building new healthy structures. They advocate for open talks about mental health and emotional well-being to mitigate emotional struggles experienced by people within higher education. To follow Cigman (2012), it is important to avoid focusing only on positive emotions while inhibiting negative ones as too much positivity can be unhelpful. While nurturing a positive mindset is a great coping mechanism, toxic positivity comes from the idea that the best way to cope with difficult situations is to see things through a positive lens and not to dwell on negative emotions. However, toxic positivity may worsen negative emotions by preventing individuals from properly addressing and working on the issues (Taylor & Brown, 1988).

Similarly, and linking to ER, individuals need to learn how to identify and connect to their emotions, accepting both positive and negative ones. EI can support people to realize what happens within themselves and their surroundings, without neglecting feelings that they do not enjoy or wish not to be true (Ericson, Kjønstad, & Barstad, 2014).

What is more, students mention the need for regular meetings or discussions around these topics to create a safe space where students can share experiences, knowledge, or their own strategies to deal with the issues. One student emphasizes that such meetings should be led or monitored by someone. Other students consider it important to have experts present that have the skills to transmit coping mechanisms, for instance through a presentation by a climate anxiety psychologist. This could be done through cooperation with the mental health center in Lund or experts on climate anxiety.

As previously mentioned, several students view their lecturers as key persons, as they have dealt with these issues for a long time already and students see great potential for getting inspiration by how their lecturers cope with their emotions. This shows that lecturers should be actively included for measures. Particularly, since professors can also benefit from an environment that addresses emotional difficulties and mental health (Smith & Ulus, 2020). A focus on ER within the university setting can assist to create an emotionally healthy culture for everybody involved.

Moreover, specific practices like mindfulness, emotion management or stress management are mentioned that students consider to be helpful to deal with their emotions but also in general for the pursuit of their studies. The practice of mindfulness has the potential to raise awareness and empower people to focus and repeatedly refocus on desires and well-being. A process that may open up new perspectives on how individuals and societies can grow internally and develop further (Davis & Hayes, 2011).

Figure 3 illustrates the web of bi-directional relationships to increase ER once more. In this figure supporting measures identified by student's themselves are included. These measures can be cultivated and increased through the implementation in the educational curriculum or presented as extra-curricular activities (Turner et al., 2017). Whether such activities are mandatary or on voluntary basis needs to be further assessed.

It can be concluded that that being an environmental and sustainability student can be a turbulent process, since students are experiencing being put outside one's own personal comfort zone (Wamsler et al., 2018), frequently being confronted with distressing topics (Hayes, Blashki, Wiseman, Burke, & Reifels, 2018), one's personal values are being challenged, and one's personal and professional boundaries are questioned (Warren Brown & Kasser, 2005). Thus, it appears that students are

experiencing negative emotions that they can hardly counteract. Literature shows that ER transfers the ability to recover from adversity and react appropriately to difficult emotions and through EI, individuals are able to perceive, express, understand, and manage emotions (Matthews, Zeidner, & Roberts 2007). An emotional resilient person is capable to deal with negative emotions, and the university plays an important role to develop ER for students through the implementation of various supporting measures (see Figure 3).
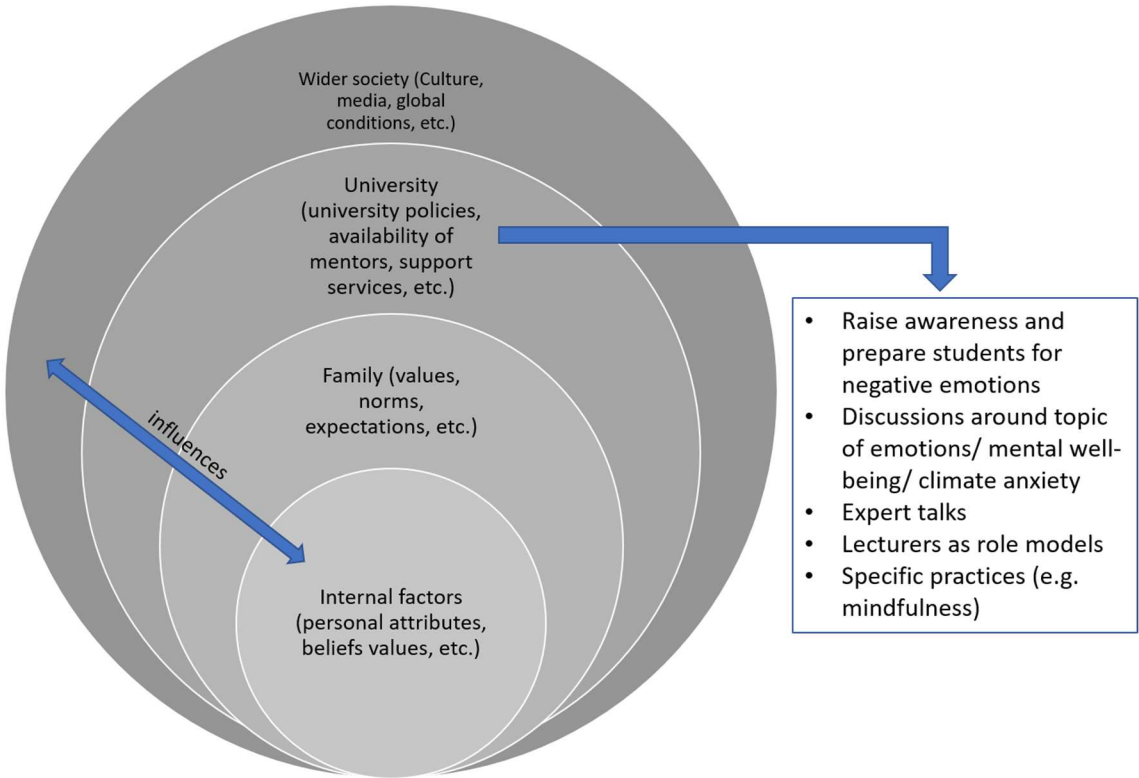
Figure 3: Web of bi-directional relationships to increase ER; Including potential supporting measures that can be implemented by the university (Source: McAllister & McKinnon (2009), adopted and modified by the author)

6. Conclusion

Literature shows that the climate crisis and entailed environmental issues have serious impacts on people's mental health (Hayes et al., 2018) but we must not neglect that a person's mental state influences how well individuals are able to act for greater purposes, like tackling CC issues. Disregarding this may create a vicious circle, as we need strong individuals pushing from the bottom to achieve real change in our society and culture (van der Schoor & Scholtens, 2015). This thesis aimed to examine the emotions that students of environmental and sustainability studies experience due to the focus of their studies. Further, it was investigated how well students feel that they can cope with their experienced emotions and what supporting measures students themselves identify as ways to cope with their emotions effectively.

The results of this thesis show that students in selected environmental and sustainability master's programs at LU experience a range of negative emotions linked to the focus of their study program. Students generally perceive to have only limited power to counteract and control these emotions. This has real impacts on their overall mental health and well-being. Students appear to demand more attention and emotional support from the university during their studies to help them cope with their emotions, manage their academic studies, and prepare them for a professional career addressing issues of complexity and uncertainty. The university, the faculty, and external actors like experts on mental health are perceived to be important actors to provide emotional support for students. By increasing students' ER through targeted interventions, positive reactions towards experienced stress can be obtained, leading individuals to gain more power over their emotions and effectively deal with both positive and negative emotions.

It seems apparent that an increasing number of complex and ambiguous emotions arise in relation to the several overlapping crises of our times. The university, educators and scholars within sustainability sciences are able to make the situations for students more bearable by increasing students' ER. Importantly, by addressing, legitimizing, and tolerating (negative) emotions experienced through environmental issues, not only students but also scholars and educators may benefit from an environment that advocates for mental well-being and longevity in the sustainability science field. Emphasizing this can help individuals and groups to understand how to thrive in complex, dynamic, and uncertain environments, attain healthy self-identities, and create practices that facilitate compassionate relationships between humans and the more-than-human world.

7. References

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Appendices

Appendix A: Questionnaire Online Survey

Introduction

Dear participants,

Thank you for taking part in my survey on the topic of "Climate Anxiety at University: Student Experiences and University Responses to Establish Healthy Emotional Responses to the Climate Crisis" as part of my master thesis.

The aim of this survey is to determine what feelings postgraduate students of Sustainability and Environmental Programs experience due to the focus of their study program, both during and after their studies.

Important: The current COVID-19 pandemic has impacted our lives and normal routines have been disrupted. For students, the switch from offline to online learning has often negatively affected the learning environment and many students suffer from this fundamental change. When completing this survey, I ask you to relate to the questions as unattached as possible from the effects originating from the implemented pandemic measures that might currently influence your education.

The survey will take approximately 10 - 15 minutes to complete. Your participation is voluntary and may be terminated at any time. Personal data will be treated in strict confidence, used exclusively for the purpose of the survey and will not be passed on to third parties. Evaluations and scientific publications are anonymous and do not allow any conclusions to be drawn about individual persons. By submitting the completed questionnaire, you agree that your data may be further used in the above-mentioned form.

The online survey will be followed by interviews with a focus on response measures on how mental well-being of sustainability students can be protected and sustained. If you are interested in participating in the follow-up interviews, you can state your email address after completing the survey.

If you have any questions about this study, please feel free to contact me via email lenastern1994@gmail.com.
Thank you,
Lena Stern

Survey Questions

1. Age: under 21 – 21-26 – 27-31 – over 31
2. Gender: female – male – other (please specify) – prefer not to answer
3. Master's Degree Program at Lund University:
   a. Disaster Risk Management and Climate Change Adaptation
   b. Energy-Efficient and Environmental Building Design
   c. Environmental Management and Policy
   d. Environmental Studies and Sustainability Science
   e. Human Ecology - Culture, Power and Sustainability
   f. Innovation and Global Sustainable Development
   g. Physical Geography and Ecosystem Science, Environmental Changes at Higher Latitudes

     h. Sustainable Service Management

     i. Sustainable Energy Engineering

     j. Sustainable Urban Design

     k. Water Resources Engineering

     l. Other:

4. Have you already completed your master's program? Yes – no

5. What is your overall stress/anxiety level? (1=I have no feeling of anxiety, 2=Very Low, 3=Low, 4=Moderate, 5=High, 6=Very High, 7=no answer)

6. What are the main causes for your general stress and anxiety? Please choose 3
   a. Anxiety linked to the pandemic
   b. Anxiety linked to my private life
   c. Anxiety linked to my education/work life
   d. Anxiety linked to global occurrences or political issues
   e. Anxiety linked to climate change
   f. Anxiety linked to medical illness
   g. Other:

7. What is your current level of stress/anxiety related to climate change? (1=Very Low, 2=Low, 3=Moderate, 4=High, 5=Very High, 6=no answer)

8. Please indicate the sources that triggered/reinforced your level of stress/anxiety related to climate change.
   a. News/Social media
   b. Education
   c. Social surroundings
   d. Lived experiences
   e. Other:

9. What emotions arise in you if you think about climate change? Please choose three answer options
   a. Hope
   b. Motivation
   c. Purpose
   d. Inspiration
   e. Excitement
   f. Vulnerability
   g. Anger
   h. Grief
   i. Anxiety
   j. Despair
   k. Stress
   l. Burden
   m. Feeing Overwhelmed
   n. Other emotion:

10. How well do you feel your classes have helped you to cope with emotions relating to climate change? (1=Very poorly, 2=Poorly, 3=Moderately Well, 4=Well, 5=Very Well)
    a. Please elaborate

11. How well do you feel that your sustainability-related education has prepared/is preparing you for a career after your studies? (1=Very poorly, 2=Poorly, 3=Moderately Well, 4=Well, 5=Very Well)
    a. Please elaborate

12. Thank you for your participation! If you are interested in joining follow-up interviews, please enter you email address here. I will contact you with further information.

Appendix B: Interview Guideline

Thank you so much for participating in my interviews.

The purpose of the interview is to further investigate the feelings that environmental and sustainability students have in relation to their studies. So, we will be talking about your different emotions, how or why they occurred and what could be done to deal with them effectively. In the interview we will talk about environmental issues and that covers everything from global warming, biodiversity loss, plastic pollution, waste disposal etc. The interview will take around 20 minutes and we will cover around 12 questions. If there is something you don't understand or you want me to elaborate on, please don't hesitate to tell me. Before we start I, need to mention that, for the purpose of the thesis, this interview is recorded, is this okay with you?

And how are you feeling today?

Okay, then let's start with the interview!

1. As an environmental and sustainability student you are constantly confronted with different environmental issues. When you think about these environmental issues, what are the first emotions that come to your mind that you feel atm?
2. Overall, are your emotions concerning environmental issues primarily positive or negative?
3. Do you know the source of these emotions? (Do you think that the lectures you took played a role for the existence or origin of your emotions?)
4. How have these emotions influenced your daily life? (Any sort of actions that were triggered or maybe hindered)
5. Have these emotions affected the way you see your future in general, your future job or maybe activities you would like to engage in?
6. How much power or lack of power do you feel you have over your emotions?
7. Have you employed any kind of strategies for yourself to deal with negative emotions triggered by the topics covered in your studies?
8. Has your master's program equipped you with tools or strategies that can help you cope with your emotions?
9. During your lectures, have you ever been introduced to the term eco-anxiety or climate anxiety or generally to the existence of any negative emotions that might arise due to the nature of your studies? If no – would this have helped you in any kind of way?

10. Which role does the university, as a whole, play to help students cope with any negative emotions triggered by the topics covered in your studies?

11. What do you think is needed in practice to improve the way how environmental students can cope with negative emotions that the focus of their program might trigger?

12. Do you see a connection between mental health and the ability to make a change towards a sustainable future – is there a relationship between mental well-being/mental health and planetary health?

Is there anything from your side you would like to add?

Then I would just like to know how you would like to be referred to in the final report (first name only or anonymous):

Thank you so much for sharing your insights and thoughts on this topic.

Appendix C: Coding Frame

Codes	*Description*
Mental Health, Planetary Health & Emotions	Correlating statements that connect mental health, emotions and planetary health
Negative Emotions	Negative emotions experienced by responded originating from environmental issues
Negative Influence of Emotions	Negative effects like actions, measures, omissions, etc. that stem from experienced emotions
Personal Coping Strategies	Various strategies that respondents apply to cope with experienced emotions
Positive Emotions	Positive emotions experienced by responded originating from environmental issues
Positive Influence of Emotions	Positive effects like actions, measures, omissions, etc. that stem from experienced emotions
Power over Emotions	Perceived level of power that respondents seem to have over their experienced emotions
Response Measures	What is viewed as helpful response measure to support students to deal with their emotions, climate anxiety, etc.
Source of Emotions	Where do the emotions origin from
Current Support of Master's Program	What is currently implemented or done by master's program that students perceive to be supportive