Pro-environmental behaviour or eco-paralysis?

A study on the effect of social cohesion on sustainable behaviour, moderated by climate anxiety

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Foreword

I am pleased to present this research paper, which explores the interplay between social cohesion, climate concerns, and sustainable behaviour. By making use of a comprehensive survey of Dutch participants, I aimed to uncover valuable insights into these interconnected factors. While the findings did not reveal significant effects of social cohesion on sustainable behaviour, I discovered that climate anxiety emerged as a significant predictor of sustainable behaviour. This underscores valuable insights and raises the question whether climate anxiety should be desired to increase to promote sustainability.

I would like to express my gratitude to everyone who was involved in this process, especially to my thesis supervisor, Noël Koster, peer students and friends who have each provided valuable guidance and feedback throughout the process of this research. I could not have done this without you and I am grateful to have had such great support during these intense months.

This research paper serves as a modest contribution to the field, and I hope it sparks further discussion and exploration. Together, let us utilize this knowledge to drive positive change and create a more sustainable future.

Floor Egberink

Abstract

Introduction: The climate crisis is a social injustice phenomenon and social inequality due to the climate crisis is increasing. There is an urgent need to study the climate crisis as a social crisis. This study shifts away from looking at individual actions but is rather focused on collective behaviour. Climate change anxiety is an increasingly urgent issue that is currently left out of policies. The research objective therefore is; what is the effect of social cohesion on sustainable behaviour and is this effect moderated by climate change stress? *Theory*: The Social Identity Theory and its relevance to understanding how social cohesion influences sustainable behaviour is explored. The importance of ingroup identification and social norms in shaping behaviour is emphasized in this theory. The potential influence of climate anxiety on sustainable behaviour is discussed with the Uncertainty Identity theory. *Method*: The Cultural Changes in the Netherlands and the Living Situation Index questionnaires of 2018 were used to conduct one simple linear regression analysis and two multiple linear regression analyses by making use of IBM SPSS 27. *Results*: There were no significant effects of social cohesion on sustainable behaviour and of the moderating effect of climate stress found. The hypotheses are rejected. *Conclusion and policy advice*: Social cohesion does not have a significant effect on sustainable behaviour, possibly due to measuring low-cost behaviours and using a single item to measure sustainable behaviour. Climate anxiety is found to be a significant predictor of sustainable behaviour, but increasing anxiety is not recommended. The policy advice is improving mental health care facilities and support from non-governmental organizations. It also emphasizes the need for government changes and climate action policies.

Ethical statement

The study is approved by the Ethical Review Board of the Faculty of Social and Behavioural Sciences of Utrecht University under filing number 23-0703.

1. Introduction

1.1. Climate change and social injustice.

The climate crisis is happening and the consequences are catastrophic. Greenhouse gas emissions will lead to increasing global warming, which in the best scenario stop at an increase of 1.5°C in the near term, however, each small increase will intensify multiple and concurrent hazards (IPCC, 2023). The effect of human activities on the climate has already started impacting many severe weather events and unliveable climatic conditions across the globe (IPCC, 2023). Deep, rapid and sustained action is needed in order to drastically reduce greenhouse gas emissions. Furthermore, the most recent report by the Intergovernmental Panel on Climate Change (2023) heavily emphasises the social impact of the climate crisis. Vulnerable and marginalised communities who have historically had the smallest contribution to the climate crisis, are disproportionally affected by its consequences. The climate crisis *is* a social crisis, as social inequality is expected to increase consequently. Climate change will disproportionately affect disadvantaged groups such as poor people in high-income countries (Levy & Patz, 2015). Access to safe food and water is shaking and insecure. Health-related diseases are expected to increase, causing more pressure on the care system. Additionally, millions of refugees as a result of inhabitable regions due to climate change are expected (Levy & Patz, 2015). We shift from labelling climate change as an environmental crisis towards a social crisis and need to study it as one. The impacts on humanity and our social structures will be enormous.

1.2 Scientific relevance

The responsibility for climate change and its solutions are often viewed through the lens of individual actions and barriers in psychology and human nature. However, there is an urgent need to shift away from a culture of shaming each other for non-sustainable behaviour and towards acknowledging the influence of higher-level institutions and structural factors which are the core of the cause of the climate crisis (e.g., Atkinson & Jacquet, 2021; Gifford, 2011; Swim et al., 2009). Attributing climate inaction solely to psychological barriers present in all humans overlooks the role of powerful corporations, governments, and other institutions in shaping behaviour and culture (Atkinson & Jacquet, 2021). We cannot examine the association between climate change and human behaviour without taking into account the underlying policy and structural issues that created the crisis in the first place. Hence, a

sociological lens on the solutions of the climate crisis and within the scientific debate itself is needed (Norgaard, 2018). This study strives to fill these scientific gaps and add valuable research to the field of sociological climate change.

1.3 The collective as an institution

Thus far, psychological and sociological research on climate change have especially focused on household consumers and the barriers they experience in pro-environmental behaviour. However, it is less clear how insights into the human cognition of collective actions play a role in solving the climate crisis (Atkinson & Jacquet, 2021). Therefore, this study does not look at sustainable behaviour through the lens of the individual, but rather through the lens of the collective. Collective efficacy is an incredibly powerful tool which is able to lead towards large, structural solutions and changes. Rosenmann et al. (2016) state that in a globalising world with an increased interconnectedness of societies and cultures, one's level of social identity is able to encourage collective action. Additionally, a large collective consensus on climate change and proposed solutions are needed for large-scale policy support and trust levels in government or other authorities (Smith & Mayer, 2018). The collective is an institution and could be our most powerful one in society.

People draw on others in their social environments in order to understand how to behave, especially when it comes to sustainable behaviour (Sparkman et al., 2021). The problem of climate change is complicated and thus the actions which people are supposed to take are complicated as well. Sparkman et al. (2021) state that people need heuristics in their social contexts to draw from in order to know what to do when it comes to things such as energy saving at home. However, most empirical research has been done within pro-environmental/activist social groups, not so much within the ‘ordinary’ social groups of our society that people are part of. Therefore, this study will focus on the effect of social cohesion on pro-environmental behaviour.

1.4 The future is frightening

Additionally, a topic related to climate change has yet to receive its advised attention by policy makers, is the impact of the climate crisis on mental health and emotional well-being (Cunsolo et al., 2020).

Even those who are not yet directly affected by the impacts of the climate crisis, many different effects on their mental health have been found in research in recent years. Especially young people seem to be significantly affected by mental health issues, largely caused by the belief that their futures will be heavily affected but they have limited control over the current climate actions taken and feel like their governments are failing them to take the necessary action (Hickman et al., 2021; Lawrance et al., 2021; Ojala, 2012). There have been many terms coined in recent years to give a name to these emotions and feelings, such as ecoanxiety, ecological grief, climate change anxiety, solastalgia, eco-guilt and biospheric concern (Cianconi et al., 2020). All describe to some extent intense fear and stress about anticipated threats to livelihood and grief about the loss of habitats and ecosystems (Cunsolo et al., 2020). These feelings, such as ecological grief, are logical and legitimate responses to climate change and will become increasingly common responses within the Anthropocene (Cunsolo & Ellis, 2018).

Weintrobe (2021) report the urgency of renewing support systems in order to take care of an entire generation going through *collective mourning*, as climate anxiety is a collective experience. We are the first generation to face mass extinction and have to live daily with dreadful and uncertain feelings about the future of everything. These emotions are not solely felt on an individual level, Hickman et al. (2021) find in their study that 75% of young people agree that the future is frightening. Lawrance et al. (2021) report community breakdown as a consequence of mental health issues due to climate change. Even though we label negative emotions as bad and definitely unpleasant, they are potentially very effective activators (Stanley et al., 2021). There has been little research on whether communities or populations that experience climate anxiety on a large scale, are going into a fight or flight mode, either disengaging from the issue or showing more sustainable behaviour. Therefore, this study will focus on the effect of social cohesion on sustainable behaviour and the moderating effect of climate anxiety.

The research questions of this study are:

Descriptive questions

1a. How many people in the Netherlands experience climate change anxiety/stress?

1b. How many people in the Netherlands experience strong social cohesion?

Explanatory questions

2a. To what extent do social networks affect sustainable behaviour

2b. Is this effect moderated by climate anxiety?

Policy question

3. What policies might enhance this effect?

2. Theoretical framework

Previous research has shown that individual climate action and sustainable behaviour can benefit society as a whole. Much of the responsibility of climate action is in the hands of large institutions, such as governments and large companies, as they are able to have a large-scale impact (Seyfang, 2009). However, given the scale and urgency of the climate crisis, action is necessary at all societal levels ranging from individual behaviours to systematic changes within institutions, laws, policies, and infrastructures (Lenton et al., 2019). Personal behaviour is largely caused by the social influences we experience. Social psychology research has a long history of demonstrating the immense effects of social influence on personal behaviour (McDonald & Crandall, 2015). As the vast majority of scientists have reached a consensus on the fact that climate change is happening and that the consequences will have an effect on every part of our lives, societal change needs to happen in order to achieve collective climate action (Rees & Bamberg, 2014). In order to further understand what shapes and influences people to behave sustainably, this chapter will dive into the underlying mechanisms of how social cohesion affects sustainable behaviour. In order to tackle climate change, social networks play a critical role in changing behaviour. Additionally, this chapter will dive into the role that climate anxiety might have on this effect. Scholars argue that climate anxiety could either paralyse people in their sustainable behaviour or encourage them to behave more sustainably. This chapter provides a framework for understanding how and why social cohesion affects sustainable behaviour according to the Social Identity Theory. Further on, the theory of Uncertainty Identity will be applied to understand how climate anxiety interacts with this effect.

2.1 Social-Identity Theory

In order to understand how social groups influence behaviour, and in particular sustainable behaviour, the Social Identity Theory is used. At the core of the Social Identity theory lies Tajfel's classic definition of social identity as an *"individual's knowledge that he belongs to certain social groups together with some emotional and value significance to him of this group membership"* (Tajfel, 1974). Social groups, whether large demographic categories or small, task-oriented teams, provide their members with a shared identity that prescribes and evaluates who they are, what they should believe and how they should behave (Hogg, 2016). Fritsche et al. (2017) study and emphasise the importance of the collective dimension of social identity. Many scholars describe environmental appraisals and responses

as processes fuelled by the cognitions and motivations of personal actors. Although some of these motivations and behaviours are conceptualised as being directly or indirectly affected by people's social environment, they always relate to a personal, instead of a collective, definition of the self (Fritsche et al., 2017). Therefore, Fritsche et al. (2017) introduced the Social Identity Model of Pro-Environmental Behaviour, which looks beyond the personal-level determinants of sustainable behaviour, as these are unable to fully explain the effects of collective factors. Fritsche et al. (2017) explain this model as follows: people often define themselves in terms of the social group they belong to and its group members, "We", instead of only individually, "I". When following this idea, people do not calculate a personal cost and benefit analysis of sustainable or pro-environmental behaviour, but rather a collective analysis. In other words, people often think and act as if they were collectives and not as individual persons, affected by others.

2.1.1 Ingroup-identification

An important aspect of the Social Identity Model of Pro-Environmental behaviour is the extent to which individuals are able to identify with relevant social groups, *ingroup-identification*, in order to predict or understand their behaviour (Fritsche et al., 2017). For group-based action to occur, people need to identify with a group, which means they should be able to categorise the self in a group and feel invested within that group (Ellemers et al., 1999). These can either be groups that are intrinsically related to environmentalism or that are not. What a group stands for is determined by people's perception of the ingroup prototype including ingroup norms of thinking and behaviour and specific ingroup goals which may be inferred from situated intergroup comparisons, social identity induction, perception of group interests or group-based motivation (Sherif & Jackman, 1966). A crucial element of the Social Identity Theory is that individuals have a need for positive self-esteem which motivates them to behave in ways that create, maintain and protect the positive perception of their social identity (Martiny & Rubin, 2016). This sequentially means that members of a social group are actively trying to avoid *negative* social identity and *negative* ingroup statuses (Brown, 2000). Moreover, while norms are often understood as compelling people to act to gain positive social approval, they also help to shape our perception of what is the good thing to do and thus inspire people to act so as to see themselves in a positive light (Cialdini & Goldstein, 2004). In order for people to be able to lead to positive ingroup-identification, they need to be able to understand the desired behaviours within that group, in order to achieve social approval.

2.1.2 Social norms

To understand what defines the perception of *positive* behaviour to create, maintain and protect social identities, we need to understand the mechanism that causes social cohesion to influence shared values, or social norms. Most often, shared values are used as a way to orient towards the achievement of a common goal (Schiefer & van der Nol, 2017). Multiple scholars have demonstrated how shared values and norms are the essential core of social cohesion, because they make it possible for the members of the group to identify with common goals, plans and to structure social interaction according to the shared behavioural norms (e.g. Botterman et al., 2011; Kearns & Forrest, 2000). Social norms are the ideal or desired forms of behaviour which people in a group try to adhere to. In sociological research, an important feature of social norms is that they cause a positive feedback loop between individual and group behaviour: the more widely that a norm is practised by members of a group, the more strongly others are motivated to practise it too (Burke & Young, 2011).

In the recent decade, there has been much research on the social norms and the influences of social groups on sustainable behaviour. In general, research on pro-environmental behaviour has demonstrated multiple factors that determine whether individuals will behave sustainably. These factors include, but are not limited to, global and personal values and norms, goals, basic environmental problem appraisal and ingroup identification (Fritsche et al., 2017). Social norms play a critical role in guiding individuals on how to effectively address climate change, as they can serve as a reliable source of motivation. In the complex context of the climate crisis, individuals are often not able to fully comprehend the systems they are part of and their role within them, however, they can still act effectively by relying on the sources provided by experts and other individuals (Sparkman et al., 2021). For example, we do not personally have to determine which packaging materials are biodegradable, as they contain informative labels provided by experts that tell us what to do or we can look at how our peers are separating their waste. More often than not, the actions and information provided by others consist of valuable information about what is true, good and effective behaviour, which influences our decision-making process and consequently; behaviour (Atkinson & Jacquet, 2021).

Additionally, research shows that ingroup norms influence intentions to behave in a climate-friendly manner and that ingroup identification moderates these effects. Masson & Fritsche (2014) research which facet of ingroup identification is driving norm conformity. In

their study, they find that the perceived climate friendliness of other in-group members is positively associated with one's own intentions to show pro-environmental behaviour. They also find that the importance of the group identity for the self, the satisfaction with and the commitment to the identity, contribute positively to complying with pro-environmental group-level norms. Additionally, Culiberg and Elgaaied-Gambier (2016) tested the influence of social norms on country-level on pro-environmental behaviour and the influence of social norms on significant-other-level on pro-environmental behaviour. They find that the pro-environmental social norms on a country-level positively influence both the injunctive and descriptive norms of significant others. The social norms consequently have a significant positive effect on showing pro-environmental behaviour. Additionally, Fritsche et al. (2017) find that people are more likely to behave according to ingroup norms and goals when they believe in the collective efficacy of their group, thus, believing that the group is able to attain its goals.

The first expectation for this study that can be constructed. The social norm of sustainable behaviour positively influences individuals' behaviour through their social environment. Based on the Social Identity Theory, individuals are likely to act in ways that are beneficial for their ingroup acceptance and that are beneficial for the creation, maintenance and protection of their social identities. This results in the first hypothesis being:

H1a: The more cohesive people are within a group, the more likely they are to behave sustainably.

2.2 Unsustainability is the norm

Even though the literature brings us to our first hypothesis, in which social cohesion has a positive effect on sustainable behaviour through social norms, these social norms also bring significant challenges as a solution to climate change. Some scholars, in recent years, have started to look at social norms as a major hurdle in the solution to climate change (e.g. Lasarov et al., 2022; Smith et al., 2012; Sparkman et al., 2021). The next part will dive into this contemporary lens of behavioural change and the role of sociology in addressing climate change. Social norms are seen as the problem in that the behaviour of many individuals is fuelling climate change and that many of these actions are the norm, such as flying, driving alone, consuming meat, not considering the environment in family planning, failing to conserve energy, discarding functioning products and buying disposable items (Sparkman et al., 2021). The fact that these actions and behaviours are the norm, is the key reason as to why they are unsustainable. The previously discussed literature tells us that individuals are not likely to

deviate from the norm and that this unsustainable behaviour is also effectively telling them that this is what is right, good and helping them to achieve their personal goals. People are likely to fear negative judgement from others when deviating from the normative status as they are likely to be looking for social approval (Schiefer & van der Nol, 2017).

2.2.1 Norms in the Netherlands

The vast majority of Dutch citizens are concerned about climate change and the increasingly hotter summers, the rise in sea levels and declining biodiversity (Kaal & Damhuis, 2020). However, it remains difficult to determine the social norms regarding sustainable behaviour. Thinking that something is important does not equal taking action in regard to that topic. A common explanation for 'doing nothing despite knowing' comes from the fact that people do many things on autopilot; acting from familiar habits and routines (Renes, et al., 2011). Consuming meat is a habit; it is something people have known since their youth to do every day and the alternative is not something people are familiar with. It takes willpower to change this and often the social groups and the norms within them, in which people live, are telling people that unsustainable things are the norm, and to deviate from that can cause a decrease in social approval (Renes, 2021). Another study also reports that Dutch citizens consider climate change to be the second most important issue that society is currently facing. Consuming less or no meat at all is considered to be the second-best thing one can do in terms of individual pro-environmental behaviour (Krystinee, 2021). However, relative meat consumption has actually increased by 1,5kg per person on a yearly basis since 2005 (Dagevos et al., 2022). A conflict of norms is clearly seen here, as descriptive and injunctive norms do not align. The injunctive norm refers to the commonly approved or disapproved behaviour or value. Even though respondents largely agree that climate change is an important issue and rate either eating less meat or no meat at all as the second best thing one can do, the descriptive norm (actual behaviour shown) shows the opposite of what one would expect (Smith et al., 2012). Smith et al. (2012) studied the effect of conflicting descriptive and injunctive norms on pro-environmental behaviour. Conflicted injunctive and descriptive norms resulted in weaker behavioural intentions as the positive effect of a pro-environmental injunctive norm disappeared when they were met with an unsupportive descriptive norm. These effects remained even after controlling for attitudes and perceptions of control. Keizer and Schultz (2012) also find a backfiring effect of injunctive norms when descriptive norms are not aligned. A conflict of norms is destructive to the effect of pro-environmental cues. Lasarov et al. (2022)

find that this effect is especially true for already more sustainable individuals. Their results show that social moral licensing, which are positive sustainable social cues (e.g. a social marketing campaign) might receive a backfire effect instead, in which consumers deviate from these sustainable cues. The effects of such normative messages can potentially be destructive and lead to less instead of more sustainable behaviour (Lasarov et al., 2022). These studies lead to the expectation that promoting sustainable ideas actually leads to a backfiring effect, since the descriptive and injunctive norms do not align. People are being told that sustainability is the norm and that every individual needs to contribute, however, the descriptive norms do not align with this message. Therefore, an contrary effect in which people deviate from sustainable behaviour is expected. The second hypothesis for this study can be drawn.

H1b: The more cohesive people are within a group, the less likely they are to behave sustainably.

2.3 Climate anxiety

In this study, the goal is to research the effect of social cohesion on sustainable behaviour, and whether this effect is moderated by experiencing climate anxiety. As previously explained, an increasing number of people are experiencing climate anxiety which is leading to more (psychological) research.

2.3.1 Uncertainty-Identity Theory

The uncertainty-identity theory by Hogg (2007) is a motivational component of the previously discussed Social Identity theory. The uncertainty-identity theory explains how feelings of uncertainty motivate people to identify with their existing social groups or to choose new groups to identify with, in order to control, reduce and protect themselves from these uncertain feelings. As explained previously, this study focuses on experiencing feelings of concern as a reaction to climate change. When placing this topic in the lens of the uncertainty-identity theory by Hogg (2007), feelings of climate anxiety, climate concern or eco-anxiety are the experienced uncertain or stressful factors in this theory. The core mechanism of the uncertainty-identity theory is that group identification is the most effective way to resolve anxious feelings (Hogg, 2007). The expected result is that people who identify themselves with a group are more likely to identify even stronger with that group when they are experiencing

feelings of uncertainty (Hogg, 2007). Leamy et al. (2011) conclude in their literature review that self-identity and connectedness of an individual to their social network, are among the core characteristics and main predictors of resilient mental health. Collectivist notions and the feeling of belonging to a particular cultural group or community were emphasised to be a positive factor as much hope and support was received from this collectivist identity (Leamy et al., 2011).

Stanley et al. (2021) divide feelings regarding the climate crisis in three categories; anger, anxiety and depression. They report that eco-anger is the greatest predictor of pro-climate action, activism and individual behaviours (e.g. recycling/composting). However, eco-anxiety and eco-depression were both causing less adaptive pro-climate behaviours. Additionally, a study by Whitmarsh et al. (2022) reports that higher climate anxiety is a predictive asset of -some- pro-environmental behaviours. However, these behaviours for which climate anxiety was a positive predictor, are interesting enough behaviours that require more effort, such as encouraging peers to save energy, buying second-hand items and borrowing or leasing products. On the other hand, pro-environmental behaviours that require less effort, such as making minor different consumer choices, not wasting food and recycling were affected negatively by experiencing climate anxiety.

However, Ojala (2012) finds that experiencing negative emotions in relation to climate change results in higher levels of pro-environmental behaviour. This study was able to identify three different coping strategies, which acted as a mediator in the effect of pro-environmental behaviour. These coping strategies are problem-focused, meaning-focused and de-emphasizing the threat, in which only the latter did not have an effect on pro-environmental behaviour. Additionally, Kaida and Kaida (2016) report a significant effect of psychological factors, in terms of feelings relating to climate change, on pro-environmental behaviour. They also find that this often exists in a feedback loop, in which current environmental behaviour influences current psychological well-being and affects expectations of future subjective well-being. These results suggest that pro-environmental behaviour predicts and is a consequence of psychological well-being in relation to climate change.

In order to draw an expectation for the moderating effect of climate anxiety on the effect of social cohesion on pro-environmental behaviour, we expect that being part of a socially cohesive group reduces climate anxiety and that climate anxiety is most likely a predictor of more pro-environmental behaviour. We are therefore able to construct the last hypothesis:

H2: The positive effect of social cohesion on sustainable behaviour will be stronger for people who experience climate anxiety.

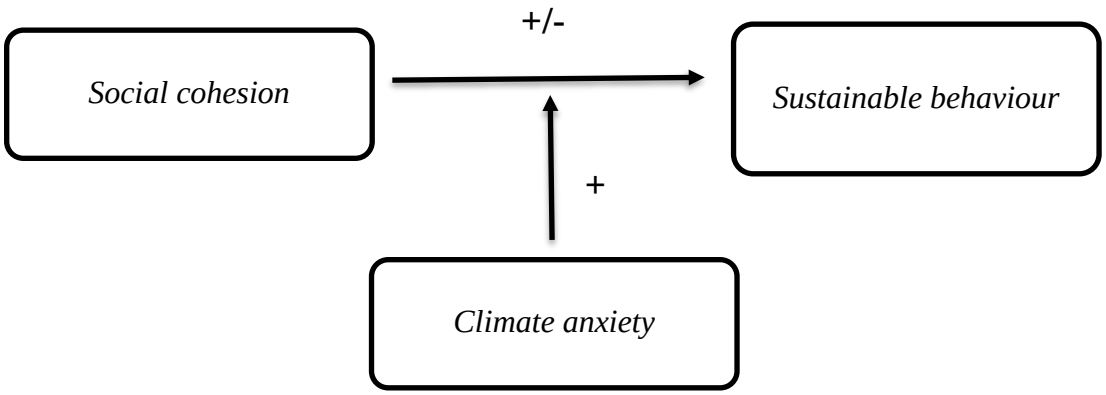

Figure 1. Path Model of the effect of Social Cohesion on Sustainable Behaviour moderated by Climate Anxiety.

3. Data & Methods

3.1 Dataset & Sample

The goal of this research is to examine whether social cohesion has an effect on sustainable behaviour and whether this effect is moderated by climate anxiety. In order to do this, a combination of two datasets was used. The Cultural Changes in the Netherlands (CC) and the Living Situation Index (LSI) questionnaires are both conducted every two years among the Dutch population. This research is a collaboration between the Social Cultural Planning Office (SCP) and the Dutch Central Statistical Office (CBS), which have combined these two datasets prior to publishing. The goal of the CC questionnaire is to be able to gain insights into the opinions and views among Dutch people about society and culture in the Netherlands, over time. LSI study aims to develop an indicator to determine the social situation in the Netherlands and to monitor societal development over time. The LSI questionnaire is a follow-up study of the CC questionnaire, in which people are asked at the end whether they want to participate in the second study. The studies were conducted in two periods, which started on November 1st, 2017 and ended on January 31st, 2019.

The target group of the CC questionnaire consists of Dutch adults and additionally included 16 and 17-year-old citizens. The target group of the LSI study consists of the same sample, as it is a follow-up study, however, this study excludes the 16 and 17-year-old respondents. Residents who are not registered in the Municipal Personal Records Database and those who belong to the institutional population were excluded from both studies. In order to obtain a representative sample, a stratified two-stage model was used in which (sub)municipalities were systematically selected for each area appropriate to their population proportions. During the second stage, simple random samples of the target audience were drawn. The response rate of the CC questionnaire is 58,0% and the response rate of the LSI questionnaire was 52,7%. Both of these questionnaires conform to the ethical research guidelines. Informed consent, voluntary participation and anonymity were ensured.

3.2 Selection criteria

As this research is focused on adults, respondents aged below 18 years old are excluded from the analyses. Furthermore, only respondents who answered all of the relevant questions

for this research (the variables), are included. Lastly, respondents who answered ‘I do not know’ or ‘no opinion’ on the included questions for the analyses, were also excluded from this research and considered as ‘missing data’. The remaining sample after the selection has N=2235 respondents.

3.3 Operationalisation

Dependent variable - Sustainable behaviour

The dependent variable in this study is ‘sustainable behaviour’. This variable is measured with the question “When you buy something, do you pay attention to whether that product is harmful to the environment?” This question consists of seven answer categories which are (1) never, (2) almost never, (3) mostly not, (4) sometimes yes, sometimes no, (5) mostly yes, (6) almost always, (7) always.

Independent variable - Social cohesion

The questions that were used to create a variable of social cohesion are based on other studies (e.g. Sampson, 2017). This study will make use of the following questions:
‘I have a lot of contact with my immediate neighbours´; ‘People in this neighbourhood treat each other in a pleasant way’; ‘I live in a cosy neighbourhood with a lot of cohesion’; ‘People hardly know each other in this neighbourhood’. To extend this research beyond social cohesion in neighbourhoods, additional questions about the frequency of contact with family and friends were asked. These questions all have the same answering categories, which consist of a scale of 1-5. (1) Totally agree, (2) agree, (3) neutral, (4) disagree, (5) totally disagree. For most of these statements, answer category one translates into being a highly cohesive neighbourhood, except for the statement ‘People hardly know each other in this neighbourhood’. In order to measure with a reliable scale, the answering categories of this particular statement were reversed. The total of seven items were combined into a scale variable ‘social cohesion’, of which the internal consistency is acceptable ($\alpha = .742$).

Moderating variable - Climate anxiety

As for the moderating variable in this study, climate anxiety, three questions and statements are included. These questions are; ‘The degradation of the environment poses a risk to the future of children’; ‘I actually find all the fuss about the environment/sustainability exaggerated’; ‘I am concerned about the state of the environment’. These questions all have

the same answering categories, which consist of a scale of 1-5. (1) Totally agree, (2) agree, (3) neutral, (4) disagree, (5) totally disagree. For two out of three questions, answer option one translates into high climate anxiety, whereas answer option one for the question 'I actually find all the fuss about the environment/sustainability exaggerated', means the opposite. In order to create a scale for this variable, the answering options of this question have been reversed. The total of three items were combined into a scale variable 'social cohesion', of which the internal consistency is acceptable ($\alpha = .700$)

Since climate anxiety is a moderation variable, an interaction effect will be measured. This variable was created by combining the variables of social cohesion & climate anxiety as an interaction variable by multiplying the standardized scores on the scales of both social cohesion and climate anxiety.

Control variables

The first included control variable in this study is sex, as research shows that men and women experience different levels of climate anxiety. Women are disproportionately affected by the consequences of climate change, compared to men, in many areas, such as financial and physical and are sequentially experiencing higher levels of climate anxiety (Djerf-Pierre & Wängnerud, 2016).

The second control variable included in the analyses is whether respondents have children. Research shows that people with children potentially have more concerns about climate change as it affects future generations and increases negative emotions such as guilt and fear (Gaziulusoy, 2020; Lawson et al., 2019). In order to include this variable, the question 'Do you have children below the age of 12?' was used. Unfortunately, we are thus only able to include parents of young children. This variable is a dichotomous variable in which having children (0) is the reference category.

The third control variable that is included is the place of residency of the respondent. Ecopsychology suggests that those living in large cities are experiencing a loss in their connection to nature which results in city residents not caring enough to protect nature (Dodds, 2021). The statement that is able to measure this variable is 'I live in the countryside'. The answer categories 'Disagree' (4) and 'Totally disagree' (5) were used to determine living in the city. This variable was also transformed into a dichotomous variable in which living in the countryside (0) is the reference category.

The last variable that is used in the analyses is whether the respondent believes that their own household shares responsibility for solving the climate crisis. People behave

significantly more sustainably when they believe in their personal consumer efficacy (Masson & Fritsche, 2014). The question that is used to include this control variable was 'To what extent do you think that you own household is able to really make a contribution to solving the environmental problem?' The answer categories are on a scale of 'Totally agree' (1) to 'Totally disagree' (7). This question was transformed into a dichotomous variable for which the first three answer categories represent 'Yes' (1).

3.4 Factor analyses

Tables 1.a and 1.b presented display the factor loadings and eigenvalues obtained from factor analysis to uncover underlying latent factors that explain the relationships among observed variables. These variables are social cohesion (Table 1.a) and climate change anxiety (Table 1.b). The factor loadings in the table represent the strength and direction of the relationship between each observed variable and the latent factors. In both tables, high positive scores for component 1 are visible. The magnitude of the loading indicates the strength of the relationship, with larger values indicating a stronger connection. The factor analysis of social cohesion (Table 1.a) present two components. The Principal Component analysis asserts a cut-off point of .40 and eigenvalues larger than 1, hence the decision was made to choose for component 1, as all factor loadings were larger than .40. The factor analysis of climate change anxiety (Table 1.b) presents only one component. Overall, this table provides valuable insights into the underlying factors and their relationships with the observed variables.

Table 1.a Factor Loadings and Eigenvalues of the 7 items of Social Cohesion (N=2235)

Items	**Factor loading**	
	Component 1	**Component 2**
How often: contact with family	.452	.545
How often: contact with friends	.545	.624
How often: contact with direct neighbours	.744	.283
How often: contact with other neighbours	.704	.307
Contact with direct neighbours	.759	-.388
People treat each other pleasantly in the neighbourhood	.712	-.447
A cosy neighbourhood with a lot of cohesion	.768	.450
Eigenvalue	3.138	1.413
% of Variance	44.823	20.184
Cumulative %	44.823	65.007

Table 1.b Factor Loadings and Eigenvalues of the 3 items of Climate Change Stress (N=2235)

Items	**Factor loading**
	Component 1
Climate change is a threat to the future of children	.638
The fuss about the environment is exaggerated	.592
Worried about the environment	.672
Eigenvalue	1.902
% of Variance	63.399
Cumulative %	63.399

3.5 Descriptive statistics

Table two shows the descriptive statistics of all included variables in the analyses on sustainable behaviour. The sample for these regression analyses consisted of a total of 2238 respondents, 48% of whom were male and since the dataset measures binary sexes, the other 52% of respondents are female. On a scale of 1 to 5 measuring social cohesion, on which 1 is 'high cohesion' and 5 is 'low cohesion', respondents scored an average of 2.29, which suggests that the majority of the respondents live in cohesive environments. The dependent variable of this study, sustainable behaviour, is measured on a scale of 1 to 7. On this scale, a score of 7 equals 'always behaving sustainably' and 1 equals 'never behaving sustainably'. Respondents show an average score of 3.58, which is nearly equally divided. The moderating variable in this study is climate stress. On a scale of 1 to 5, 5 meaning that the respondent does experience stress about climate change and 1 meaning they do not worry about climate change, the mean score of respondents is 2.18. This suggests that the majority of respondents do, to some extent, experience stress about climate change. The remaining control variables in this study are all measured as dummies, hence the statistics translate into percentages. 21% of respondents do have children below the age of 12; 66% of respondents live in a non-rural area (a town or city) and 90% of respondents do believe that their own household has some level of responsibility in solving the climate crisis.

These statistics answer the first two research questions of this study.

1a. How many people in the Netherlands experience climate change anxiety/stress? As the sample of this dataset is representative for the Dutch adult population, 76,4% of Dutch citizens experience climate stress.

1b. How many people in the Netherlands experience strong social cohesion?
Based on the data, 54,8% of Dutch citizens are part of a strong socially cohesive group/neighbourhood.

*Table 2***.** Descriptive statistics (means)

	N	Min	Max	Mean	SD
Social cohesion	2235	1	5	2.29	.745
Sustainable behaviour	2235	1	7	3.58	1.706
Climate stress	2235	1	5	3.82	.774
Male	2235	0	1	.48	.500
Children	2235	0	1	.21	.409
City	2235	0	1	.66	.473
Own household responsible	2235	0	1	.90	.502

Note: **Source:** CV2016 & SLI2017

3.6 Analysis

The analyses of this study are a simple linear regression and two multiple linear regressions making use of IBM SPSS version 27. A table of all regression analyses is shown (Table 3) in three models. The first model is a simple regression in which the effect of social cohesion on sustainable behaviour is shown. The second model shows this same effect including the moderating variable, climate anxiety, and the control variables; age, gender, residential area, income and educational level. The third model includes all the above effects and variables, adding the interaction effect of worries about climate change and gender. In

order to establish the quality and reliability of these analyses, the corresponding assumptions were checked. Apart from a large Variance Inflation Factors (VIF) in the first model, none of the assumptions were infringed.

4. Results

Table 3. Regression Analyses for variables predicting Sustainable Behaviour including Interaction variable of Social Cohesion & Climate Stress.

	Model 1	Model 2	Model 3
	B(SE)	B(SE)	B(SE)
Constant	3.703(.117)***	.208(.208)	-.258(.524)
Social cohesion	-.052(.048)	-.059(.045)	.177(.211)
Climate stress		.910(.043)***	1.054(.134)***
Male		.006(.066)	.008(.066)
Children		-.208(.081)**	-.210(.081)**
City		.044(.070)	.045(.070)
Own household responsible		-.040(.066)	-.040(.066)
Social cohesion X Climate stress			-.062(.055)
Adjusted R^2	.001	.169	.169
F	1.134	76.782***	66.007***
N	2235	2235	2235

*p<.05 **p<.01 ***p<.001
Notes: Reference category Male = Female (0)
Reference category Children = No children (0)
Reference category City = Rural (0)
Reference category Own household responsible = Own household not responsible (0)

Table three shows the three regression models of this study. The first model (Model 1) presents the regression analysis for the effect of the independent variable on the dependent variable, thus the effect of social cohesion on sustainable behaviour. This model is not significant (Adjusted R^2 = .001, F (1, 2233) = 1.134, p=.287). A proportion of 1% of the model is explained by social cohesion.

The second model in table two (Model 2) presents the results from the regression analysis on the effect of social cohesion on sustainable behaviour, taking the control variables (sex, having young children, residency and the perceived responsibility of a respondent's own household) into account. This model is significant and explains 16,9% of the variance in this

model (Adjusted R^2 = .169, F (6, 2228) = 76.782, p<.001). This model tests whether there is a significant direct effect of social cohesion on sustainable behaviour in order to either accept or reject the first hypothesis of this study (H1a) or the second alternative hypothesis (H1b). The first hypothesis expects a positive effect of social cohesion on sustainable behaviour and the second hypothesis expects the opposite; a negative effect of social cohesion on sustainable behaviour. Model 2 shows no significant effect of social cohesion on sustainable behaviour, therefore, we reject both hypotheses. However, two other significant effects were found. The first shows a significant positive effect of climate change stress on sustainable behaviour (B=.910, p<.001). This explains how the more climate change stress a person experiences, the more sustainable behaviour they show. The second significant effect is a negative effect of the control variable 'having children' on sustainable behaviour (B=-.208, p>.01). As this control variable is a dichotomous variable, this effect explains how those who do have children, show less sustainable behaviour.

The third model in table 2 (Model 3) presents the effect of social cohesion on sustainable behaviour and whether this effect is moderated by having climate stress, including all control variables (sex, having young children, residency and the perceived responsibility of a respondents' own household). This model is significant (Adjusted R^2 = .169, F (7,2227) = 66.007, p<.001) and explains 16,9% of the variance on sustainable behaviour. In order to test whether the effect of social cohesion on sustainable behaviour is moderated by experiencing climate anxiety, an interaction variable of social cohesion and climate change stress was included in Model 3. A stronger positive effect of social cohesion on sustainable behaviour for climate anxiety was expected (H2). The results of this effect are however not significant. This means that the effect of social cohesion on sustainable behaviour is not significantly affected by climate anxiety. Therefore, we are able to reject the second hypothesis (H2). Additionally, the third model presents a significant effect of having children on sustainable behaviour. Similarly to the second model, this effect explains how having children has a significant negative effect on sustainable behaviour (B=-.210, p>.01).

To conclude the results of this research; no support was found for any of the hypotheses and they are thus rejected. Prior to constructing hypotheses, two research questions were created. These read as follows: *"To what extent do social networks affect sustainable behaviour?"* and *"Is this effect moderated by climate anxiety?"* The answer to both of the explanatory questions is that no significant effects were found.

5. Conclusion & Discussion

Based on previous research, a positive effect within strongly cohesive groups of social norms on sustainable behaviour, was expected. The degree to which people are able to identify with their social groups, ingroup identification, is an important predictor of sustainable behaviour. However, other scholars argue that social norms and ingroup mechanisms could actually be a barrier to sustainable behaviour. Many unsustainable actions are the norm within our society, and to avoid negative ingroup statuses, people are not likely to deviate from the unsustainable norm. Therefore, the second expectation was oppositional; social cohesion has a negative effect on sustainable behaviour. This research concludes that there is no significant effect of social cohesion on sustainable behaviour. An alternative explanation for the non-significant results is that this study was only able to measure 'low-cost' sustainable behaviour. Masson & Fritsche (2014) find that the effect of self-investment on ingroup-norm conformity (sustainable behaviour) is much more pronounced for a high-cost behaviour compared to a low-cost behaviour. Checking whether a product is harmful to the environment before purchasing falls in the category of 'low-cost behaviour', and could therefore perhaps not be significantly influenced by social cohesion. Along the same lines, another explanation for the non-significant results of the effect of social cohesion on sustainable behaviour is the fact that this study was unable to measure sustainable behaviour by multiple items. Studies that have focused on the effect of social cohesion on various and more defined types of pro-environmental behaviour, such as purchasing solar panels and separating household waste, do find significant positive effects of social influence by peers or neighbours (Busic-Sontic & Fuerst, 2018; Crociata et al., 2016).

The uncertainty-identity theory explains how experiencing feelings of stress and concern promotes people to identify and rely more strongly on their social groups. The expectation was thus that climate anxiety strengthens the positive effect of social cohesion on sustainable behaviour. However, the results conclude that there is no significant effect of climate anxiety as a moderator. Stanley et al. (2021) find that eco-anxiety caused less pro-environmental behaviours than did eco-anger. Additionally, Whitmarsh et al. (2022) reported that climate anxiety is only a positive predictor of sustainable behaviour when it comes to 'high-effort' pro-environmental behaviours. The item that was used to measure sustainable behaviour was 'low-effort', hence this could be an alternative explanation for the non-

significant effects in this study. This study does however conclude that climate anxiety is a significant predictor of sustainable behaviour (B=.684, p>.05).

5.1 Strengths & Limitations

A strong point of this study is that it adds upon existing research, as it looks at large-scale pro-environmental behaviour through the lens of social groups and social-identities. The study looks beyond the individual responsibility of climate change and focuses on the collective. Even though it is not the first sociological study to be done regarding climate change, to my knowledge, it is the first one in the Netherlands. It is also the first large scale (N=2235) study of its kind among Dutch respondents.

The research also has its limitations. Firstly, this study makes use of three items in the survey to measure climate anxiety. However, most scholars who study climate anxiety make use of the Climate Anxiety Scale (CAS), developed by Clayton & Karazsia (2020). This scale consists of numerous questions in broader dimensions to better measure the subjective mental aspect of climate change. However, in the dataset used in this study, there were limited questions on the topic asked, which is why this study measures climate anxiety by only three questions. Future research on climate anxiety is advised to make use of the same Climate Anxiety Scale, in order to reproduce and compare to existing research. It is not sufficient to measure a state of one's mental well-being and health by three questions. The reliability analysis of the scale for climate anxiety is rather low (α =.700). However, regardless of this, this study was able to measure feelings related to climate change to some extent amongst a large population and a representative study in the Netherlands. The CAS is very extensive and some prior knowledge in regard to climate change and mental health is necessary, this potentially excludes groups in society that do not have this knowledge. Therefore, this study could be more inclusive and representative and present the first insights, before a deeper dive is made.

The next limitation, which has already been briefly discussed, is the level of measurement of sustainable behaviour. Unfortunately, due to the limited dataset that was used in this research, sustainable behaviour could only be measured by making use of one item: 'When you buy something, do you pay attention to whether that product is harmful to the environment?' This single question is unable to measure the various dimensions of sustainable behaviour, such as low-effort vs. high-effort, or low-cost vs. high-cost. A suggestion for future research is to measure the effect of social cohesion on the many different kinds of sustainable

behaviour. This is the only way to reproduce and compare it to existing research and derive policy advice.

6. Policy advice

In addition to answering the three main questions, this research also aims to answer the policy question which could be beneficial for general health and society institutions and both non-governmental and governmental organisations. The policy question reads as follows: 'What policies might enhance or limit the effect of climate anxiety on social cohesion and sustainable behaviour?'

Even though none of the hypotheses of this study were accepted, there are findings that suggest the necessary attention from organisations and other institutions in order to create a safe and healthy society. First and foremost, it is advised for future research to add the specific social norms of the group people are part of when conducting research on the effect of social cohesion on sustainable behaviour, as this study was unable to do this. Hickman et al. (2021) report that governmental changes and implementing climate action policies are more useful than individuals behaving sustainably for a significant reduction in climate anxiety. The government does not change by itself and especially climate policies have proven to be a large barrier to tackle (Universiteit van Amsterdam, 2023). Collective consensus on climate change and the proposed solutions are needed for large-scale governmental policy support (Smith & Mayer, 2018). The discussed theories on social norms in this study can be investigated in order to develop future research on how social norms are able to change collective ideas and influence governments. A very recent and relevant example are the actions of civil disobedience by Extinction Rebellion. The movement and actions of Extinction Rebellion, only a few years ago, used to be considered 'extremely radical' are now starting to become mainstream (Huisman, 2023). This is a very real and tangible example of how collective actions can shift the norm and influence societal ideas on democracy and perhaps even governmental policy. More research on changing social norms in order to influence government policies which lead to a significant reduction in climate anxiety is necessary and advised. The theoretical framework of this study can serve as a base for further research.

Secondly, climate anxiety showed to be a significant predictor of sustainable behaviour. However, it is not a desirable state within society to increase levels of climate anxiety among citizens in order to promote sustainable behaviour. Research by Hickman et al. (2021) shows that among young adults, teenagers and children, the rates of climate anxiety and other negative emotions in regard to climate change are already alarmingly high. Around 50% of people between the ages of 16-25 report that their feelings about climate change negatively affect their

daily life and functioning. These rates are expected to increase, simultaneously with the climate crisis. As the Netherlands is finding itself in a mental health crisis among adolescents, especially during and post the Covid-19 pandemic, it is not advised to create more stress among Dutch citizens (Bosmans et al., 2023). Even after the lockdowns and restrictions, the mental health rates of young Dutch citizens are not improving. Waiting times for mental health care are three to four times longer than they should be (Ministerie van Volksgezondheid, Welzijn en Sport, 2023). If there is an increasing number of (young) people relying on mental health due to negative emotions experienced in relation to the climate crisis, the system will not be able to handle it. The World Health Organisation declared emergent policy advice to include mental health in climate change policies last year (World Health Organization: WHO, 2022). The policy advice, therefore, is an improvement and expansion of mental health care professionals and facilities, to create a healthy and resilient society.

Apart from advice towards governmental and mental health care facilities, non-governmental organisations can also fulfil an important role within the realm of the mental health crisis. Dodds (2021) states how climate anxiety is the most present among three groups within society. The first are, as discussed previously, young people. The second group are first responders to climate-related natural disasters, such as firefighters, and the last group are climate scientists and activists. My internship organisation, Humanistisch Verbond, focuses on providing mental health support for this last group. Humanistisch Verbond is a non-governmental non-profit organisation that works toward a free, humane and collective society based on the philosophy of humanism. One of their current programmes is focused on 'eco-humanism', focusing mainly on the philosophy that we as humans are part of the earth and its ecosystems, rather than placing humans beside or above nature. The main component of this programme is support groups, events and gatherings for climate activists that are on the cusp of experiencing a burn-out (Humanistisch Verbond, 2023). These groups are a great example of how non-governmental can step in and fulfill necessary gaps within society. The last part of policy advice is the sugesstion for non-governmental organisations (e.g. Humanistisch Verbond) to focus on and create programmes for the other vulnerable groups.

Weintrobe (2021) explains how neoliberal systems have caused a lack of care for any feelings in relation to climate change. We are living in mass extinction and are the first generation looking at uncertainty about future survival, and need to take the corresponding emotions seriously if we want to create resilient and healthy communities (Weintrobe, 2021). Climate anxiety is a collective experience, and before we can offer the younger generations 'messages of hope', we are obliged to first acknowledge their struggles, distress and mental

well-being (Hickman et al., 2021). Organisations such as Humanistisch Verbond can create a campaign focused on young people dealing with these negative emotions in relation to climate change and help them. Past and current programmes and events bring inspiration for a similar approach. Current support groups for different audiences are accompanied by a mental caregiver, which is a similar profession to a psychologist. The Dutch organisation for climate psychology has reported that professional mental health care and finding like-minded people to seek support are very important assets in order to tackle the issue and negative effects of climate anxiety. To bring young people together, in the presence of a mental caregiver and to freely talk about their worries and be taken seriously, is important for the resilience and mental wellbeing of Dutch citizens, especially for those who are expected to save the planet.

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Appendix

Appendix 1. Syntax

```
DATASET ACTIVATE DataSet1.

    * Independent variable: Social cohesion; factoranalysis

FACTOR
  /VARIABLES V211 V212 V213 V214 V091 V092 V093
  /MISSING LISTWISE
  /ANALYSIS V211 V212 V213 V214 V091 V092 V093
  /PRINT INITIAL EXTRACTION ROTATION
  /CRITERIA MINEIGEN(1) ITERATE(25)
  /EXTRACTION PC
  /CRITERIA ITERATE(25)
  /ROTATION VARIMAX
  /METHOD=CORRELATION.

RELIABILITY
  /VARIABLES=V211 V212 V213 V214 V091 V092 V093
  /SCALE('ALL VARIABLES') ALL
  /MODEL=ALPHA
  /STATISTICS=DESCRIPTIVE SCALE CORR
  /SUMMARY=TOTAL MEANS.

        * -> Cronbachs alpha= .742

            * SCHAAL MAKEN SOCIALE COHESIE

COMPUTE socialco = (V091 + V092 + V093 + V211 + V212 + V213 + V214) / 7.
EXECUTE.

RECODE socialco (1 thru 5=COPY) (ELSE=SYSMIs) INTO SCoh.
VARIABLE LABELS  SCoh.
EXECUTE.

        *DEPENDENT VARIABLE: sustainable behaviour


RECODE VAR1086 (1 thru 7=COPY) (ELSE=SYSMIs) INTO Drzgdr.
VARIABLE LABELS  Drzgdrg.
EXECUTE.

            * MODERATIE VARIABELE climate change stress

RECODE VAR1080 (5=1) (4=2) (3=3) (2=4) (1=5) (ELSE=SYSMIS).
```

```
RECODE VAR1082 (1 THRU 5=COPY) (ELSE=SYSMIS).

RECODE VAR1083 (5=1) (4=2) (3=3) (2=4) (1=5) (ELSE=SYSMIS).

FACTOR
  /VARIABLES VAR1080 VAR1082 VAR1083
  /MISSING LISTWISE
  /ANALYSIS VAR1080 VAR1082 VAR1083
  /PRINT INITIAL EXTRACTION ROTATION
  /CRITERIA MINEIGEN(1) ITERATE(25)
  /EXTRACTION PC
  /CRITERIA ITERATE(25)
  /ROTATION VARIMAX
  /METHOD=CORRELATION.

RELIABILITY
  /VARIABLES=VAR1080 VAR1082 VAR1083
  /SCALE('ALL VARIABLES') ALL
  /MODEL=ALPHA
  /STATISTICS=DESCRIPTIVE SCALE CORR
  /SUMMARY=TOTAL MEANS.

        *-> Cronbachs alpha =.700

       * SCHAAL MAKEN climate change stress

COMPUTE klmtstrss = (VAR1080 + VAR1082 + VAR1083) / 3.
EXECUTE.

RECODE klmtstrss (1 thru 5=COPY) (ELSE=SYSMIs) INTO clmtstrss.
VARIABLE LABELS  clmtstrss.
EXECUTE.

 * Controle variable: Sex (0=woman)

RECODE M_V (1=1) (2=0).
EXECUTE.

    * Controle variable: Having kids (0=no)

RECODE JongKind (1=1) (2=0).
EXECUTE.

    * Controle variable: City vs rural (0=rural)

RECODE StedGem (1=1) (2=1) (3=1) (4=0) (5=0).
EXECUTE.
```

```
   *Controle variable: Household responsibility (0=no)

RECODE VAR1092 (5=0) (6=0) (7=0) (1=1) (2=1) (3=1) (4=1).
EXECUTE.


       * DESCRIPTIVE STATISTICS

* Alleen meenemen als iemand alle vragen beantwoordt

COMPUTE nomiss=nmiss(SCoh, clmtstrss, Drzgdr, M_V, JongKind, StedGem, var1092) =
0.
FILTER BY nomiss.

SELECT IF nomiss = 1.

FREQUENCIES VARIABLES=SCoh
  /STATISTICS=STDDEV VARIANCE RANGE MINIMUM MAXIMUM SEMEAN MEAN
MEDIAN MODE SUM
  /ORDER=ANALYSIS.

FREQUENCIES VARIABLES=clmtstrss
  /STATISTICS=STDDEV VARIANCE RANGE MINIMUM MAXIMUM SEMEAN MEAN
MEDIAN MODE SUM
  /ORDER=ANALYSIS.

FREQUENCIES VARIABLES=Drzgdr
  /STATISTICS=STDDEV VARIANCE RANGE MINIMUM MAXIMUM SEMEAN MEAN
MEDIAN MODE SUM
  /ORDER=ANALYSIS.

FREQUENCIES VARIABLES=M_V
  /STATISTICS=STDDEV VARIANCE RANGE MINIMUM MAXIMUM SEMEAN MEAN
MEDIAN MODE SUM
  /ORDER=ANALYSIS.

FREQUENCIES VARIABLES=JongKind
  /STATISTICS=STDDEV VARIANCE RANGE MINIMUM MAXIMUM SEMEAN MEAN
MEDIAN MODE SUM
  /ORDER=ANALYSIS.

FREQUENCIES VARIABLES=StedGem
  /STATISTICS=STDDEV VARIANCE RANGE MINIMUM MAXIMUM SEMEAN MEAN
MEDIAN MODE SUM
  /ORDER=ANALYSIS.

FREQUENCIES VARIABLES=var1092
```

```
  /STATISTICS=STDDEV VARIANCE RANGE MINIMUM MAXIMUM SEMEAN MEAN
MEDIAN MODE SUM
  /ORDER=ANALYSIS.


* INTERACTION VARIABLE SOCIAL COHESION X CLIMATE STRESS

COMPUTE SCohXclmtstrss = SCoh * clmtstrss.
EXECUTE.

       * ANALYSES

       * MODEL 1

REGRESSION
    /MISSING LISTWISE
    /STATISTICS COEFF OUTS R ANOVA COLLIN TOL CHANGE
    /CRITERIA=PIN(.05) POUT(.10)
    /NOORIGIN
    /DEPENDENT Drzgdr
    /METHOD=ENTER SCoh

       * MODEL 2 + CONTROLE VARIABELEN

   REGRESSION
    /MISSING LISTWISE
    /STATISTICS COEFF OUTS R ANOVA COLLIN TOL CHANGE
    /CRITERIA=PIN(.05) POUT(.10)
    /NOORIGIN
    /DEPENDENT Drzgdr
    /METHOD=ENTER SCoh clmtstrss M_V JongKind StedGem var1092

          *MODEL 3 + CONTROLE & INTERACTIE

   REGRESSION
    /MISSING LISTWISE
    /STATISTICS COEFF OUTS R ANOVA COLLIN TOL CHANGE
    /CRITERIA=PIN(.05) POUT(.10)
    /NOORIGIN
    /DEPENDENT Drzgdr
    /METHOD=ENTER SCoh clmtstrss SCohXclmtstrss M_V JongKind StedGem var1092
```