Comfortably Numb

Exploring the Impact of Moral Disengagement on Luxury Emissions

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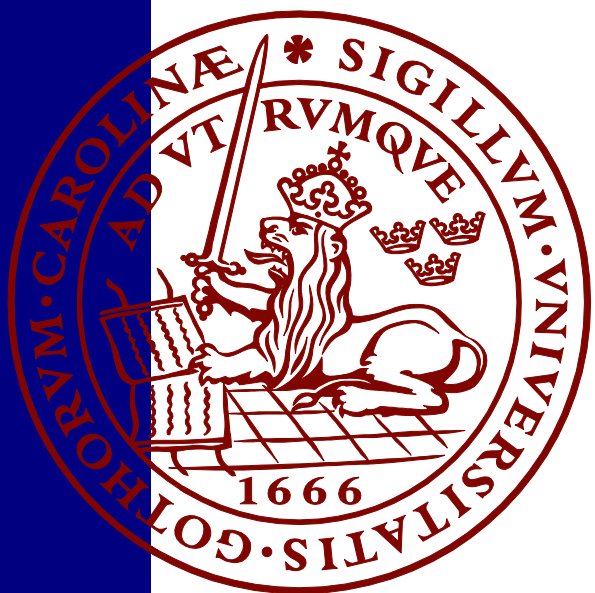

LUCSUS
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Abstract

Those least responsible for climate change are most vulnerable to its impacts, raising the question of climate justice and moral responsibility for emissions. This thesis combines Shue's concept of subsistence- and luxury emissions, with Bandura's theory of moral disengagement. A multiple regression analysis (n = 87) of data from an online questionnaire was conducted to examine whether moral disengagement, environmental engagement and gender predicted past luxury emissions. The overall regression model including environmental engagement (β = -0.362, p = .006), social desirability (β = -0.069, p = .095) and age (β = 0.026, p = .071) was statistically significant (R^2 = .143, F (3,83) = 4.618, p = .005). Although no correlations between luxury emissions and moral disengagement or gender were found, possibly due to the biased sample, the thesis discusses potential strategies for increasing moral engagement, as previous research has found morality and justice to be important motivators for environmental action.

Keywords: Moral disengagement, luxury emissions, moral responsibility, pro-environmental behaviour, environmental engagement, inner dimensions

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1 Introduction

1.1 Background

Climate change can be described in many ways. One can use natural science to explain what is happening: Carbon dioxide concentrations in the atmosphere are at their highest level in the last 2 million years, causing rising sea levels, melting glaciers and the acidification of the ocean (IPCC, 2023). Or one can use economics: The resulting heatwaves, extreme weather events, floods and droughts threaten infrastructure, economic systems and livelihoods (IPCC, 2023). But maybe, the vocabulary we use should be more human: Climate change harms people. It threatens basic human rights (IPCC, 2023). It limits peoples' access to food, water and shelter (IPCC, 2023). It affects physical- and mental health and leads to cultural losses (IPCC, 2023). Some might lose their country, their home (IPCC, 2023). Most likely, it will be the ones who are not responsible for climate change in the first place (IPCC, 2023).

Climate change is thus a question of justice. The fact that those most responsible for the greenhouse gases in the atmosphere today will be the least impacted by the effects of climate change (IPCC, 2023) makes climate change deeply unfair. Additionally, it is already marginalised groups, due to processes such as colonialism, racism, socio-economic inequality and uneven development, that are especially vulnerable (IPCC, 2023). If justice, harm and fairness are things we value, climate change also becomes a moral issue, as these questions are central to morality (Graham et al., 2011). Despite that, it is not primarily discussed as a moral issue (Heald, 2017). Neither is it clear who carries the moral responsibility for the harms of climate change, which poses the question: How should this moral responsibility be assigned?

In 1993, Henry Shue proposed determining individual moral responsibility for emissions based on their necessity. He divided emissions into two types: subsistence emissions and luxury emissions, where the first category contains emissions produced by the fulfilment of basic human rights, while the second is the result of inessential preferences. Both Shue (1993) and Peeters et al. (2015) convincingly argue that individuals should be seen as morally responsible for their luxury emissions, but not their subsistence emissions. Considering this moral responsibility, why are we not drastically cutting our emissions, knowing they cause harm to others? This lack of action, and perceived lack of care, was the motivation behind this thesis.

Historically, evil behaviour was seen as a result of evil people. Moral transgressions were attributed to people's disposition: that because of psychopathology or personal characteristics, the individual "had failed to internalize the moral standards of society" (Tsang, 2002, p.25). Today, a more common explanation is that immoral behaviour stems from a combination of situational and psychological factors found in most people, meaning that most of us are capable of committing immoral acts (Tsang, 2002). One of these factors is moral disengagement.

Moral disengagement, introduced by Bandura, is a cognitive process that allows people to commit acts that go against their moral standards without feeling guilty (Bandura et al., 1996). This is possible due to the use of eight mechanisms that effectively disengage the behaviour from moral standards and responsibility (Bandura et al., 1996). Despite Bandura highlighting how moral disengagement on a collective level can have detrimental effects by "supporting, justifying, and legitimizing inhumane social practices and policies" (Bandura et al., 1996, p.372) little research has been conducted on how it impacts environmental behaviour[1]. Instead, most research on moral disengagement focuses on workplace culture (D'Arcy et al., 2014; Haque & Waytz, 2012; Moore et al., 2012), bullying and aggressive behaviour (Bandura et al., 1975; Kowalski et al., 2014; Paciello M et al., 2008) as well as the psychological construct itself (Detert et al., 2008; Hyde et al., 2010). However, a few dedicated researchers work on the connection between moral disengagement and environmental behaviour (Nicolai et al., 2022; Peeters et al., 2015, 2019; Stoll-Kleemann et al., 2022, 2023; Stoll-Kleemann & O'Riordan, 2020), but there are requests for more research on the topic (Stoll-Kleemann et al., 2023). As this thesis explores the connection between moral disengagement and luxury emissions, it has the potential to contribute to filling these research gaps.

1.2 Research Questions and Hypotheses

The research questions this thesis aims to answer are the following:

RQ1: *What is the relationship between moral disengagement in general (MD-G) and past luxury emissions?*

RQ2: *Do environmentally engaged people differ from the general public in terms of luxury emissions?*

RQ3: *Is there a difference between men and women in terms of luxury emissions?*

RQ4: *What strategies can be used to foster moral engagement?*

[1] A search on Zotero for: "moral disengagement" AND ("climate change" OR "high carbon behavio*" OR "pro-environmental behavio*" OR "pro-environmental intent") showed 17 results, while "Moral disengagement" + subject "environment" showed 52 results. Most of these studies where a) not relevant or b) focused solely on meat-eating, maybe because this is easier to frame as a moral issue.

Considering that previous research has found that low moral disengagement predicts low-carbon- or pro-environmental behaviour (Leviston & Walker, 2021; Nicolai et al., 2022; Stoll-Kleemann et al., 2023), **Hypothesis 1** is a positive correlation between moral disengagement and past luxury emissions. **Hypothesis 2** is a negative correlation between environmental engagement and past luxury emissions. It seems intuitive that people who are collectively environmentally engaged would be more likely to lower their individual emissions, but as for example the weak correlation between environmental attitudes and high- cost environmental action (Fliegenschnee & Schelakovsky (1998) in Kollmuss & Agyeman, 2002) shows, an intuitive connection should not be taken for granted. **Hypothesis 3** is that women will have lower past luxury emissions than men, as women are more likely to change their behaviour to be more environmentally friendly and are more emotionally engaged (Fliegenschnee & Schelakovsky (1998), and Lehmann (1999) in Kollmuss & Agyeman, 2002), and show lower rates of moral disengagement than men (Bandura et al., 1996; Detert et al., 2008; Nicolai et al., 2022; Paciello et al., 2008). As the final research question is an examination of existing literature, rather than part of the quantitative analysis, no fourth hypothesis has been formulated.

1.3 Connections and Contributions to Sustainability Science

With this thesis being conducted in Sweden, it is the only study looking at moral disengagement and climate change with a sample of Swedish residents. Although emissions are declining in Sweden, they are still above the global average (Friedlingstein et al., 2022; Naturvårdsverket, n.d.-c), and around 60 % of the emissions come from household consumption. Hence, there is still a need for Swedes to reduce their emissions, making this study of luxury emissions both relevant and problem-driven.

This thesis, with its focus on morality and behaviour, aligns with the calls for more research on inner dimensions and deep leverage points within the field of sustainability science (Abson et al., 2017; Ives et al., 2020; T. R. Miller et al., 2014; Ramstetter et al., 2023; Wamsler et al., 2021). These inner dimensions, explained as "the individual and collective mindsets, values, beliefs, worldviews, and associated human capacities" (Wamsler et al., 2021, p.2) are increasingly understood to have great potential for increasing action on climate change (Ramsetter et al., 2023; Wamsler et al., 2021). This is in line with Abson et al. (2017) suggestion to focus on root causes of unsustainability, in order to find leverage points with the potential of transformative system change. This builds on Meadows' (1999) twelve leverage points, where the level of *intent* (values, goals, world views and behaviours) is described as the deepest leverage point, a point that is often hard to affect, but where a change would have a large impact on the system (Abson et al., 2017; Meadows, 1999; O'Brien, 2018). Similarly, the idea of the *personal sphere*, presented by O'Brien (2018), can be seen as the foundation for systems

change: “The individual and collective ideas about what is just, desirable and sustainable, [...] are in turn inherited, formed, transformed, negotiated or fought for in the political sphere and realized in the practical sphere.” (O’Brien, 2018, p.157).

The fields of behavioural psychology and environmental ethics can help in understanding individual behaviour within a system (Abson et al., 2017). Understanding the inner dimensions of climate change, such as morality, and how they link to behaviour is important in order to develop strategies for increasing individuals’ personal and collective action on climate change, as well as moral behaviour in general (Ives et al., 2020; Ramstetter et al., 2023; Stoll-Kleemann et al., 2023; Tsang, 2002). Understanding individuals’ motivation is especially important in liberal democracies where policies need to be supported by citizens in order to be efficient (Ramstetter et al., 2023). By providing suggestions for how moral disengagement can be increased, this thesis is action oriented and aims for social change, two core concepts within sustainability science (Clark & Dickson, 2003; Kates et al., 2001). It also aims to highlight climate change as a moral issue.

A unique point of this thesis is its focus on luxury emissions, rather than pro-environmental behaviour. Although the behaviours themselves are sometimes overlapping, the theoretical basis is different, with luxury emissions being limited to climate change and by taking the necessity of the behaviour into account. This thesis also offers an attempt at operationalising luxury emissions.

1.4 Structure

This paper starts by introducing its theoretical basis: morality, climate justice, and Shue’s distinction between subsistence- and luxury emissions. Further, research regarding pro-environmental behaviour, moral behaviour and moral disengagement is presented to show how climate related behaviour is impacted by different variables, and how these variables relate to each other. A methodology and methods section outlines how an online questionnaire was constructed and conducted, and how the resulting data was analysed using descriptive statistics and a multiple regression analysis. The result section presents the descriptive statistics and the regression equation. The discussion section includes interpretations and implications of the results, suggestions for increasing moral engagement in the context of climate change, a discussion on the distribution of responsibility, limitations and suggestions for future research. Finally, a conclusion can be found.

2 Theory

2.1 Climate Change as a Moral Issue

The ambition of the first section is to give a short explanation of morality, and to show, through the theory of climate justice, how moral concepts such as justice and harm are connected to climate change. Because of the unjust impacts of climate change, the question of who should be responsible for mitigation and adaptation becomes even more relevant. Here, Shue's distinction between subsistence- and luxury emissions is used to provide a basis for the distribution of individual responsibility, arguing that individuals should be held morally responsible for their luxury emissions. Thus, this first part of the theory aims to provide a background to climate change as an issue of justice as well as a justification for the design of this study.

2.1.1 Morality

Morality spans many fields of study such as psychology, neuroscience, anthropology, behavioural economics and philosophy (Graham et al., 2011), but this thesis draws mainly on psychology and philosophy for its understanding of morality. Morality is traditionally seen to cover questions regarding harm to others, or behaviour that is degrading or threatens human rights (Graham et al., 2011). However, newer models such as the Moral Foundations Theory have been developed to include more aspects of morality, namely: Harm/Care, Fairness/Reciprocity, Ingroup/Loyalty, Authority/Respect, and Purity/Sanctity (Graham et al., 2011; Haidt & Graham, 2007).

It is to a large extent different social factors that decide what is considered morally relevant, as moralities are shaped when people interact with each other and institutions within a cultural and historical context (Graham et al., 2011). Cultures and groups differ in which of the five moral foundations are seen as most central, and these priorities can be passed down through generations (Haidt & Graham, 2007).

2.1.2 Environmental- and Climate Justice

Environmental justice seeks to address the fact that environmental burdens and benefits are unequally distributed, often with people of colour, indigenous people, the poor and other marginalised groups on the losing end (Figueroa & Mills, 2001). The field combines social justice- and environmental issues and focuses on two main questions: distributive justice, and participatory justice (Figueroa & Mills, 2001). Distributive justice is concerned with the distribution of environmental resources and harms, while procedural justice is concerned with participation and power (Walker, 2012). Further, environmental justice is a question of justice as recognition, meaning who is seen with

respect and value (Walker, 2012). In this thesis, the focus will be on distributive justice, specifically in the context of climate change which with its global scope is especially relevant from a justice perspective.

Impact

There are three main reasons for the unequal impacts of climate change (Walker, 2012). One: the earth simply does not heat evenly, meaning that the impacts vary across the globe (IPCC, 2021). Two: some economic systems, livelihoods, places and people are more vulnerable than others, such as economies and individuals heavily dependent on agriculture, low-lying coast areas and water scarce regions (IPCC, 2023; Walker, 2012). Three: some countries, groups, and individuals are better equipped than others to adapt to climate change (IPCC, 2023). Here, it is crucial to understand vulnerability not as an unavoidable consequence of the natural order, but rather as something that is socially constructed by processes such as colonialism, marginalisation, inequity and decision around development (IPCC, 2023). Already marginalised members of society, who lack resources and cultural- and political power, are those who most likely will be hit hardest by the effects of climate change (IPCC, 2023; Walker, 2012). This is true both when comparing nations, but also within nations (IPCC, 2023; Walker, 2012).

Future generations will bear the brunt of the effects of climate change, despite bearing no responsibility for causing it, making it a case of *intergenerational distributional justice* as well (Walker, 2012). This connects us to the double injustice of climate change: those feeling the effects of climate change are rarely those who bear the responsibility for causing it (IPCC, 2023).

Responsibility

There are four main ways that the responsibility for mitigation can be assigned: *grandfathering* (emission reductions proportional to the emission levels at a certain reference point), *carbon intensity* (using emissions per economic output to efficiently reduce emissions), *per capita* (national emissions averaged per capita) and *historical responsibility* (similar to 'per capita' but accounts for historical emissions) (Walker, 2012).

The per capita approach, which is used in this thesis, is founded on the idea that everyone "has an equal right to the global atmosphere" (Walker, 2012, p.202). Widely used is the *contraction and convergence-model*, which sets, for a certain date, a global maximum for greenhouse gas emissions in the atmosphere in order to stay below a certain temperature (Walker, 2012). This carbon budget is then divided by the global population to give a per capita carbon budget. This enables people with low

emissions to increase them (leaving room for development), while it forces the most well-off in society to drastically reduce their emissions (Walker, 2012). With the global carbon budget rapidly shrinking (MCC, n.d.), the question of mitigation has never been as urgent as now. This leads us to the next section, which explores how the responsibility for emissions can be distributed on an individual level.

2.1.3 Luxury- and Subsistence Emissions

One of the pioneers within the field of climate justice is Henry Shue, most known for his distinction of greenhouse gas emissions on moral grounds (Cripps, 2019). Shue (1993) was the first to categorise greenhouse gas emissions as either *subsistence emissions* or *luxury emissions*. He describes the first category, subsistence emissions, as those stemming from needs that are vital, urgent and essential for human survival or decency, such as the emissions that are inevitably produced just by trying to satisfy one's basic needs in this carbon-dependent world (Shue, 2001, 1993). Luxury emissions, on the other hand, are emissions due to the fulfilment of 'wants', meaning preferences that are frivolous, trivial or inessential (Shue, 1993).

Moral Responsibility over Emissions

Because climate change threatens basic human rights, defined as the right to life, freedom, family, health, education, adequate food, clothing and housing, among others (OHCHR, n.d.), it should be considered a moral harm (Peeters et al., 2015). Peeters et al. (2015) argues that individuals should be assigned *remedial responsibility* for their luxury emissions, but not their subsistence emissions. However, they add that subsistence emissions should only be exempted from moral responsibility when the individual has no available feasible alternative. Thus, their definition of subsistence emissions are: "those greenhouse gases emitted to reach subsistence or to fulfil one's basic right *and* for which individual agents have no feasible alternatives at their disposal." (Peeters et al., 2015, p.29). This is the definition that will be used in this study.

Remedial responsibility is the responsibility to fix a bad situation and to remedy the suffering of someone (D. Miller, 2007). It is based on a moral responsibility, which has three requirements: *bare causation* (the connection between an action and an outcome), *genuine agency* (having power over one's actions) and *blameworthiness* (due to "deliberate harm, recklessness, negligence or failing to fulfil a pre-existing obligation" (Peeters et al., 2015, p.21)) (Peeters et al., 2015). In this case, the bare causation lies in the connection between emissions and climate change (IPCC, 2023), the genuine agency lies in an individual's power over their own luxury emissions and the blameworthiness lies in that even small additions of emissions contribute to climate change; that luxury emissions are not necessary; and that it is commonly known that climate change causes harm (Peeters et al., 2015).

Many of the justifications used to excuse oneself from the blameworthiness of one's emissions match well with the mechanisms of moral disengagement, described later in this chapter (Peeters et al., 2015).

Categorisation and Context

Neither Shue (1993) nor Peeters et al. (2015) give an exact formula for deciding which emissions should be classified as luxurious, as this is context dependent. One example is how eating a diet low in meat is perfectly feasible in most developed societies, as overnutrition is a bigger problem than malnutrition (Peeters et al., 2015). However, in places where the latter is an issue, to argue that meat consumption is a luxury emission would be both insensitive and false, as it could be the only feasible alternative to ensure adequate nutrition (Garnett, 2009; Peeters et al., 2015). Renewable energy as a source of heating or electricity is another example, as it depends on the energy availability in the country (Peeters et al., 2015).

Cultural context also plays a role in what is seen as necessary consumption, as well as in individual consumption patterns (Peeters et al., 2015). Well-being is in many ways relative: we tend to want at least what others have (Lichtenberg, 2014). In many societies, having devices such as a computer or a smartphone is almost a requirement for access to the labour market or social settings, and people without access will be disadvantaged (Lichtenberg, 2014). Similarly, material consumption relates to status, worth and respect (Lichtenberg, 2014; Peeters et al., 2015). However, Peeters et al (2015) argues that obvious luxury emissions, such as getting the latest gadget, are not excused by the argument of social pressure.

Despite the issues regarding categorisation, both authors argue that making this distinction when working to lower emissions is essential to ensure equity: "The central point about equity is that it is not equitable to ask some people to surrender necessities so that other people can retain luxuries." (Shue, 1993, p.56). It is thus clear that luxury emissions is a reasonable and fair target for emission reduction, and that individuals have the moral responsibility to make that reduction happen.

2.2 Explaining Behaviour

With the previous section outlining why climate change is a moral issue, and arguing that individuals should, in theory, carry the moral responsibility for their luxury emissions, it is time to consider how this connects back to practice, namely human behaviour. Here, understanding which factors influence pro-environmental behaviour, such as lowering one's emissions, is fundamental for understanding how strategies to change high-emitting behaviour could be developed. However, as the existing

models for pro-environmental behaviour does not include moral factors, the point of interest in this study, this section also describes what influences moral behaviour. This includes the theory of moral disengagement, which is one way that moral rationalisation is exercised. The aim of this section is to provide a description of moral disengagement and how it operates, and how it fits into larger more overarching theories of behaviour.

2.2.1 Pro-Environmental Behaviour

Kollmuss and Agyeman (2002) describes a variety of factors that has been shown to influence pro-environmental behaviour, defined as "behaviour that consciously seeks to minimize the negative impact of one's actions on the natural and built world" (Kollmuss & Agyeman, 2002, p.240).

Two *demographic factors* are gender and education, while *external factors* include institutional factors, such as available infrastructure, economic factors and social and cultural factors such as norms (Kollmuss & Agyeman, 2002). Motivation, environmental awareness, a sense of responsibility and emotional involvement are four *internal factors* influencing pro-environmental behaviour (Kollmuss & Agyeman, 2002). Locus of control, described as whether a person feels in control of creating change (internal locus of control) or not (external locus of control), is another factor, as people with a strong internal locus of control are more likely to act in pro-environmental ways (Newhouse (1991) in Kollmuss & Agyeman, 2002).

Values ("guiding principles based on what people think is important" (Holmes et al., 2012, p.2)) are an important motivational force, shaped through our lives through interaction with family, friends, neighbours, the media and political- and environmental organisations (Chawla, 1999; Holmes et al., 2012; Kollmuss & Agyeman, 2002). Attitudes on the other hand, described as enduring feelings about something, have a smaller-than-expected impact on pro-environmental behaviour (Kollmuss & Agyeman, 2002). Environmentally caring people often engage in low-cost (in terms of time and effort) pro-environmental behaviour such as recycling, but not necessarily in high-cost pro-environmental behaviour, such as going vegan or to avoiding air travel (Diekmann & Preisendoerfer (1992) in Kollmuss & Agyeman, 2002). Similarly, environmental knowledge does not play as important of a role as one might think, with situational and internal factors making up as much as 80% of the motivation for acting pro-environmentally (Fliegenschnee & Schelakovsky (1998) in Kollmuss & Agyeman, 2002).

The model outlined above does not explicitly take moral factors into account, and neither does any other model explaining pro-environmental behaviour (Stoll-Kleemann et al., 2023). However, the authors do hypothesise that primary motives such as altruism and prosocial behaviour are often

overridden by other, more pressing needs, such as comfort, time and money, a description that fits well with the idea of competing motivations outlined below (Kollmuss & Agyeman, 2002). Further, they describe the presence of "secondary psychological responses aimed at relieving us from these negative feelings", namely fear, sadness, pain, anger and guilt associated with environmental degradation (Kollmuss & Agyeman, 2002, p.255). Moral rationalisation, of which moral disengagement is an example, could be one of those secondary psychological responses.

2.2.2 Moral Behaviour

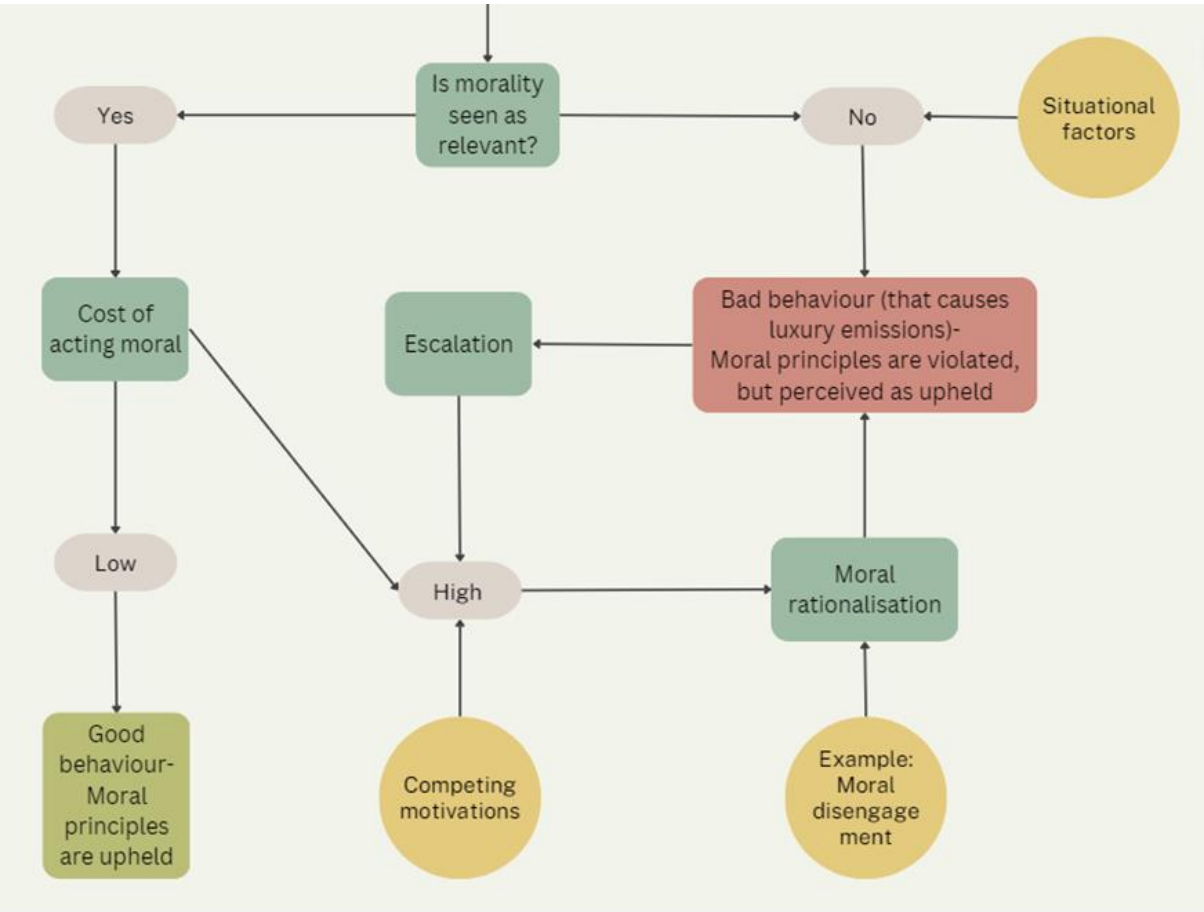

Figure 1: Shows the model of moral rationalisation, and how it connects to moral disengagement and luxury emissions. Adapted from Tsang (2002).

One model used to describe moral behaviour comes from Tsang (2002), and can be seen in Figure 1. Firstly, the model assumes that individuals value morality, which is true for most well-socialised people (Tsang, 2002). However, situational factors can impact an individual to not perceive their behaviour in a situation to be morally relevant. Examples of situational factors are obedience to authority, having a clear role, becoming 'one in the crowd', focus on routines and details, norms and others' inaction (Tsang, 2002).

If the situation instead is perceived as morally relevant, a comparison of the perceived cost and benefits of acting morally happens. A low cost leads to moral behaviour, while a high cost leads to immoral behaviour combined with moral rationalisation (Tsang, 2002). The cost of acting morally becomes high when other motivations compete with the motivation to behave morally, a motivation whose strength varies between individuals. Competing motivations can be simple everyday 'wants', or connected to other factors such as obedience or difficult life conditions (Tsang, 2002).

When moral principles are broken through a behaviour, individuals use moral rationalisation to convince themselves that they are still acting in line with their moral standards (Tsang, 2002) for two reasons: to avoid guilt (See moral disengagement below) and to avoid cognitive dissonance, experienced when two cognitions are in opposition (Festinger, 1957). Worryingly, when no moral feedback is given after an action due to moral rationalisation, the action can easily escalate. This step-by-step process of escalation is commonly seen in some of humanity's most horrifying acts, such as the Holocaust (Tsang, 2002).

2.2.3 Regulating Moral Conduct: The Theory of Moral Disengagement

This thesis focuses on one of the mechanisms of moral rationalisation, namely moral disengagement. The theory of moral disengagement is part of Bandura's social cognitive theory, which sees humans as actors with agency (Bandura, 2016). According to Bandura (1996), moral standards are learned from childhood through development and socialisation and serve as the standard against which an individual measures and regulates their behaviour. However, Bandura says, moral reasoning does not automatically lead to moral behaviour, as the use of moral agency also plays a role. Individuals use self-regulatory mechanisms to manage their behaviour, by imagining the consequences of a behaviour and subsequently pursue actions that will bring pleasure and satisfaction, while inhibiting behaviour causing feelings of guilt and self-criticism (Bandura, 2016). These anticipatory self-sanctions (or "conscience") ensures that people act in line with their moral standards (Bandura et al., 1996; Tsang, 2002). However, this mechanism can be deactivated or disengaged, which enables morally detrimental behaviour, a process called *moral disengagement.* (Bandura et al., 1996).

Moral disengagement does not change people's moral standards, instead it provides a way for people to disengage moral standards and responsibility from a certain action, enabling people to conduct harmful behaviour while thinking they are still acting in line with their moral standards (Bandura, 2016; Heald, 2017). Consequently, two people with the same moral standards may act very differently based on how morally disengaged they are (Bandura, 2016). Moral disengagement is one explanation for

how generally good people can commit atrocious acts, but it is also used by ordinary people in everyday life (Bandura, 2016).

Moral disengagement does not just happen on an individual level, but also on a collective level (Bandura, 1999). Moral disengagement on a collective level is enabled when a multitude of actors 'just do their job', without considering the moral implications, something that is encouraged or enabled by the organisation itself (Bandura, 2016). An example is the tobacco industry, enabled by the disregard of harmful consequences from a wide variety of actors (Bandura, 2016). One can imagine that climate change too, is enabled by moral disengagement on both an individual level, and a collective level.

Mechanisms of Moral Disengagement

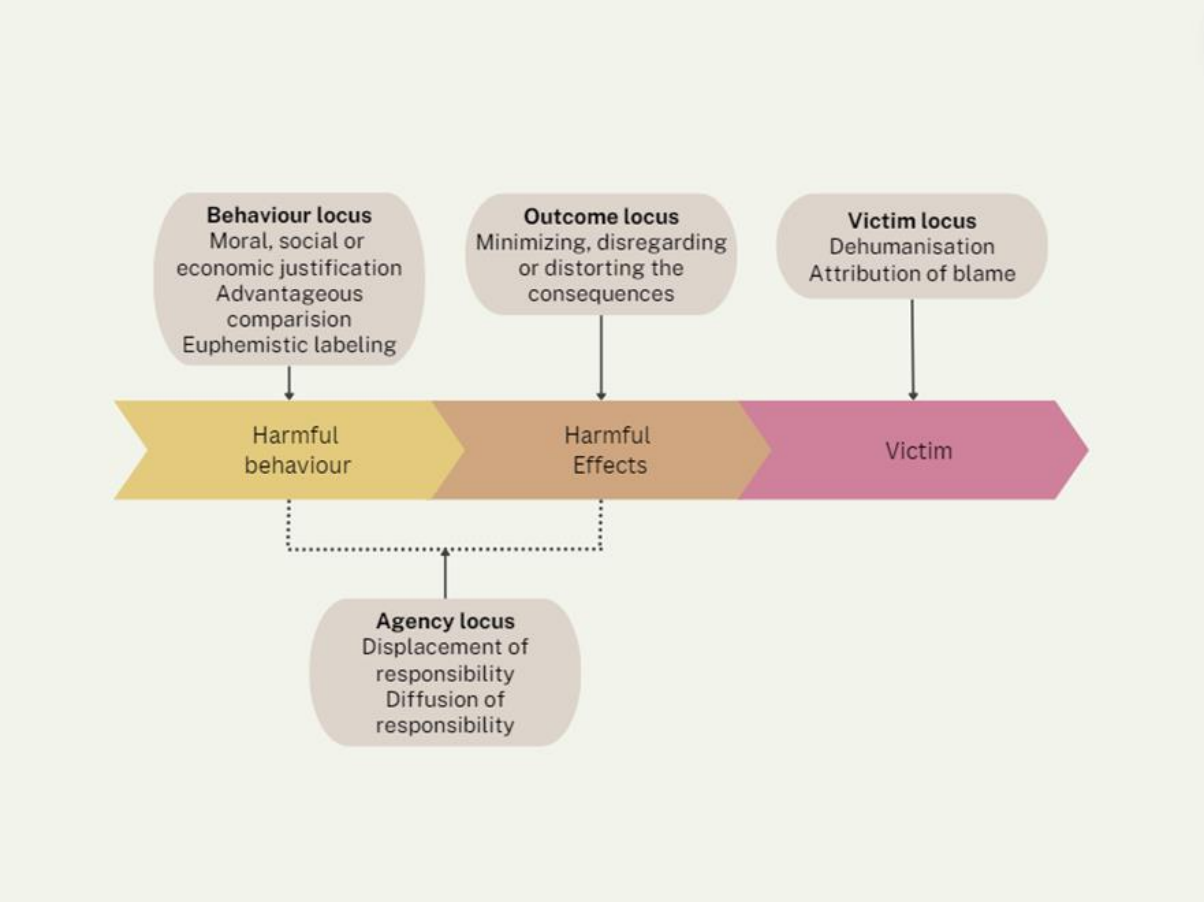

Figure 2: Shows the 8 mechanisms of moral disengagement. Adapted from Bandura et al. (1996).

Bandura (1996) describes 8 mechanisms of moral disengagement, which operate at four different places in the self-regulatory process, see Figure 2. Which mechanisms are used depends on the situation, but all mechanisms are believed to be used to avoid the moral responsibility posed by climate change (Bandura, 2016; Peeters et al., 2019). However it is important to note that the concept of moral disengagement is currently understood as multifaceted, not multifactorial, so although the eight mechanisms show different sides of moral disengagement, moral disengagement is measured

as one single concept (Bandura et al., 1996; Moore et al., 2012). A short description of the different mechanisms can be found below, based on Bandura et al. (1996):

Moral, social or economic justification is using morally, socially or economically positive outcomes to justify the harmful behaviour used to achieve these outcomes.
Euphemistic labelling is using language in a way that makes negative activities sound less bad, or even positive.
Advantageous comparison is comparing one's bad behaviour to others who behave worse, and use this as an excuse not to change one's own behaviour. It can also entail comparing an action to another action in order to make the first seem less bad, using the idea of 'the lesser of two evils'.
Displacement of responsibility is excusing one's behaviour by viewing oneself as not personally responsible, and instead placing the responsibility onto others.
Diffusion of responsibility is best described by the phrase "when everyone is responsible, no one is responsible" (Bandura et al., 1996, p.365). This happens when members of a group perform behaviour that on an individual level is harmless, but when added together becomes harmful, or when groups behave badly/make decisions and no one feels personally responsible, rather the responsibility is put on the group or other individuals.
Minimising, disregarding or distorting the consequences is seeing the benefits of a behaviour, but ignoring the negative effects, or minimising the harm the behaviour causes. It also includes misrepresenting harm and discrediting evidence.
Dehumanisation is seeing the victims of a behaviour as "less-than-human" in order to excuse harmful acts.
Attribution of blame is seeing oneself as a victim who has been driven to bad behaviour by others, putting the blame on other people or the circumstances.

What Influences Moral Disengagement?

Studies indicate that moral disengagement has a predispositional component but is also impacted by development and one's environment, implying that interventions could lower the propensity to morally disengage (Hyde et al., 2010; Moore et al., 2012; Paciello et al., 2008). Societal factors such as "the ideological orientations of society" (Bandura, 1999, p.207) can provide the foundation for moral disengagement to grow, by valuing groups of people differently, by enabling immoral behaviour and by legitimising certain moral justifications (Bandura, 1999). At a young age, there is no difference in moral disengagement by gender, but as children get older, boys tend to use moral disengagement more, something that could be linked to the gendered socialisation of aggression (Bandura, 2016).

In short

To conclude, behaviour is a complex process, determined by many factors. Moral disengagement is one factor that has the potential to influence one's pro-environmental behaviour, such as emission reductions. The next section explains how this potential connection between moral disengagement and luxury emissions has been tested in this study.

3 Methodology and Methods

3.1 Methodology

The methodological position of this research project is positivism, as it uses quantitative methods to test hypotheses that are based in theory, a so-called deductive approach (Bryman, 2018). A quantitative study was considered appropriate as the goal was to measure variables and examine their correlation, in order to say something about whether moral disengagement influences environmental behaviour, not in a few specific individuals but rather in general in people (Bryman, 2018).

A survey was conducted and the data collected was used to examine potential correlations between past luxury emissions and moral disengagement (RQ1), environmental engagement (RQ2) and gender (RQ3). Surveys are a common quantitative method used in social science, and in the field of psychology which this thesis draws on, as they allow for the collection of large amounts of data around behaviour and attitudes (Holt et al., 2019). To answer the final research question (RQ4), a review of existing literature on strategies for increasing moral engagement was carried out, as conducting any experiments was not deemed feasible with the time and resources available.

3.2 Methods

An online questionnaire was determined to be an appropriate method for data collection within the short time frame, being cheap and relatively fast to conduct, and with fast response rates (Bryman, 2018). Additionally, with sensitive topics, in this case moral disengagement and environmental behaviour, respondents are less likely to underreport their activities in an online survey than in an interview (Bryman, 2018). Further, there is no interviewer that can have an impact on the answers, and the data does not have to be manually inputted, minimising data handling errors (Bryman, 2018). The survey used the tool Sunet Survey. The survey was in English, due to several of the scales used only being validated in English, and as participants included Swedish residents that are English speaking. However, for some questions, such as the one about education, certain terms were translated to Swedish as the English terms were considered hard to understand from a Swedish

educational background. Before making the survey public, a small pilot survey was conducted, where the participants (n = 3) were asked to give feedback on the impression, clarity and language of the survey.

3.2.1 Ethical Considerations

In line with ethical good practice, the first page of the survey included information about the aim and area of the research, how the data was to be used and stored and that the survey was anonymous, as information about the participants identity was not collected. It highlighted that participation was voluntary and that consent could be withdrawn at any time by contacting the author. Finally, it asked for consent before the participant could access the survey. The survey was deemed unlikely to cause any psychological harm.

3.2.2 Validity and Reliability

As this study is not experimental, the study's internal validity is lower, and no conclusions regarding causation can be drawn (Bryman, 2018). Additionally, as the sampling was not randomised the external validity is low, meaning that the findings of this study are only applicable to this sample and no conclusions should be drawn about the general population (Borg & Westerlund, 2006; Stratton, 2021). Still, a discussion on possible implications for our understanding of moral disengagement and luxury emissions can be found in the discussion.

Measurement validity and internal reliability have been discussed under the scales below where several items measure one construct (rather than measuring behaviour).

3.2.3 Survey Construction and Items

The survey measures sociodemographic variables, environmental engagement, past luxury emissions, moral disengagement, social desirability and feeling of responsibility, in that order. Reflecting on moral questions can impact other parts of the survey, therefore the luxury emission scale was placed before the scale on moral disengagement (Stoll-Kleemann et al., 2023). The survey can be found in Appendix 1.

Sociodemographic Variables

The sociodemographic variables queried were residency, gender identity, age, highest education level, main occupation, total earned income last year and city size. These were collected in order to compare the sample to the general population and to be included in the multiple regression analysis as the variables could correlate with past luxury emissions.

Environmental Engagement

Different types of environmental engagement were measured: membership in an environmental organisation, an education or occupation related to the environment or sustainability, being active in the environmental movement and donations. The participants could agree or disagree with statements such as "Do you regularly donate money to an environmental organisation?". An index was calculated by adding up the scores for each item (Yes = 1, No = 0), with a total score of 5 indicating very high environmental engagement. This index was then used to examine the correlation between environmental engagement and luxury emissions.

Luxury Emissions

There is no established protocol for measuring luxury emissions, so one was constructed for the purpose of this paper. Twelve statements concerning the participants' behaviour last year were included, with items querying transportation, energy use, consumption and diet. An example is "Last year, did you use a car for trips that had a feasible alternative mode of transport, such as walking, biking or using public transport?"

The items included were considered a) unnecessary for the fulfilment of basic human needs or b) necessary for the fulfilment of basic human rights and needs, but there is a feasible alternative with lower emissions available in Sweden. Another criterion for inclusion was that the emissions linked to the behaviours were relatively high. Several of the items are similar to ones used to measure high-carbon behaviour or (if reversed) pro-environmental behaviour (Leviston & Walker, 2021; Nicolai et al., 2022; Stoll-Kleemann et al., 2022, 2023). The difference however, is the focus solely on climate in this report, as well as items being included based on perceived necessity. Drawing the line between subsistence emissions and luxury emissions is complex, so the precise reasoning behind the items used can be found in Appendix 2.

The statements were scored 1 for "Yes" and 0 for the other options ("No, avoided mainly due to environmental reasons"; "No, avoided mainly due to other reasons" and "An alternative was not available"). The score for each item was added up to a total "luxury emission" score, which was used to explore correlations with the other variables.

Moral Disengagement

Moral disengagement was measured using the scale developed by Moore et al. (2012), which has shown good criterion-, incremental- and predictive validity and decent internal reliability. It measures moral disengagement in general (MD-G) and consists of 8 statements, matching the 8 mechanisms of

moral disengagement, which the participant scores on a 7-step Likert scale, from strongly disagree to strongly agree. An example is “People can’t be blamed for doing things that are technically wrong when all their friends are doing it too.” The scores for each item were added up to a total score, ranging from 8 to 56 points, with 56 points indicating a very high propensity to morally disengage. This score was then used to explore the correlation to luxury emissions. In this study, the Likert scale data has been considered to be on the interval scale, as it fulfils the criteria outlined by Joshi et al. (2015). The internal reliability was acceptable (Cronbach’s $\alpha = .72$).

Social Desirability Bias

Social desirability is defined as “the need . . . to obtain approval by responding in a culturally appropriate and acceptable manner” (Crowne & Marlowe, 1960, p.353). As this desire to be ‘socially correct’ can impact the accuracy of reporting, especially in studies concerning ethics or morality, it should be measured to increase the study’s validity (Larson, 2019; Moore et al., 2012; Tan et al., 2022). It is, however, worth noting that the MD-G scale above was found to be uncorrelated to social desirability (Moore et al., 2012) and that online surveys are less susceptible to social desirability bias (Tan et al., 2022).

In order to measure social desirability bias, the Marlowe-Crowne Social Desirability Bias scale (MCSD scale) was included (Crowne & Marlowe, 1960). This is the scale that had the highest reliability in a comparative study by Tan et al. (2022), although they still found the scale’s validity and reliability ‘questionable’. It includes 33 items, such as “I have never intensely disliked anyone.”, which are answered with true or false by the respondent (Crowne & Marlowe, 1960). These answers are then compared to a key and scored accordingly. High scores indicate a high social desirability bias. Social desirability was included as an independent variable in the multiple regression analysis, as recommended by Larson (2019). In this study, the internal reliability was acceptable (Cronbach’s $\alpha = .75$).

Responsibility

A question on responsibility was included, taken from Stoll-Kleemann et al. (2022). It asks the participants how responsible they perceive different actors to be for doing something about climate change. The actors include politics, economy, individuals, society as a whole, industrialised countries, emerging economies and developing countries (Stoll-Kleemann et al., 2022). For each actor, a score from ‘None’ to ‘Complete’ (6 steps) is decided.

This question was included to examine how people perceive their own responsibility compared to those of other actors, to be used as a point for further discussion on individual responsibility in the discussion section.

Free text Box Option

Lastly, a free text box option was included at the end, to enable participants to share final thoughts if they wanted to, in line with the recommendations from Trost & Hultåker (2016).

3.2.4 Sampling

The participants for the survey were recruited through convenience- and snowball sampling, two non-probability sampling methods. The link for the survey was spread using social media, personal contacts (who in turn passed it on), and flyers put in various public places in and around Lund. The requirement for participation was being a Swedish resident over 18 years of age.

Participants

Over a period of 20 days, a total of 102 participants answered the survey. No compensation was given. In the sample, the ages ranged from 22-75 years (M = 35.5, Mdn = 30.5, SD = 15.6) and 60% were women, 38% were men, 1% were non-binary and 1 % preferred not to say. 3% of participants had an upper secondary education of three years, 69% had a post-secondary education of 3 years or more, and 23% had a postgraduate education. Most participants were students (33%), employed (47%), or retired (12%). A breakdown of the participants' total earned income for last year can be seen in Appendix 3. Almost half (47%) of the participants lived in or near a larger city with more than 100 000 inhabitants.

Comparing the sample with the general Swedish population, the sample consisted of a larger share of women and young people. The participants were also very highly educated. The participants' yearly income is comparatively low, which is likely connected to the fact that many participants were students. Additionally, a large share of participants lives in cities. A detailed comparison of sociodemographic variables for the sample versus the Swedish population can be found in Appendix 3.

3.2.5 Analysis

The data was analysed using Excel. Some questions lacked answers from certain participants, and as a result these participants were excluded from analyses where those particular variables were

examined. For the regression analysis, the total number of participants were 87, as 15 participants had to be removed due to incomplete data.

Descriptive statistics were used to analyse the socio demographic data of the sample and to further examine environmental engagement, luxury emissions, moral disengagement, social desirability and perceived responsibility.

In order to answer the first three research questions, a multiple regression analysis was conducted. Initially, the correlations between all independent variables and the dependent variable (luxury emissions) were tested with a linear regression or with boxplots for variables that were on a nominal- or rank level. Independent variables that didn't show at least a weak correlation (r = .1) or where the boxplots showed only small differences in means combined with large variance were discarded. Further, the correlations between the remaining independent continuous variables were tested in order to check for multicollinearity. After re-coding the remaining categorical variable (gender) using dummy variables, a multiple regression analysis was conducted, using a forward selection method.

4 Results

4.1 Descriptive Statistics

4.1.1 Environmental Engagement

The most common ways for participants (n = 99) to engage in environmental questions were having an education related to the environment or sustainability (65%) or being a member of an environmental organisation (60%), see Figure 3. For the environmental engagement score, the mean was 2.7, the median 3 and the standard deviation 1.5.

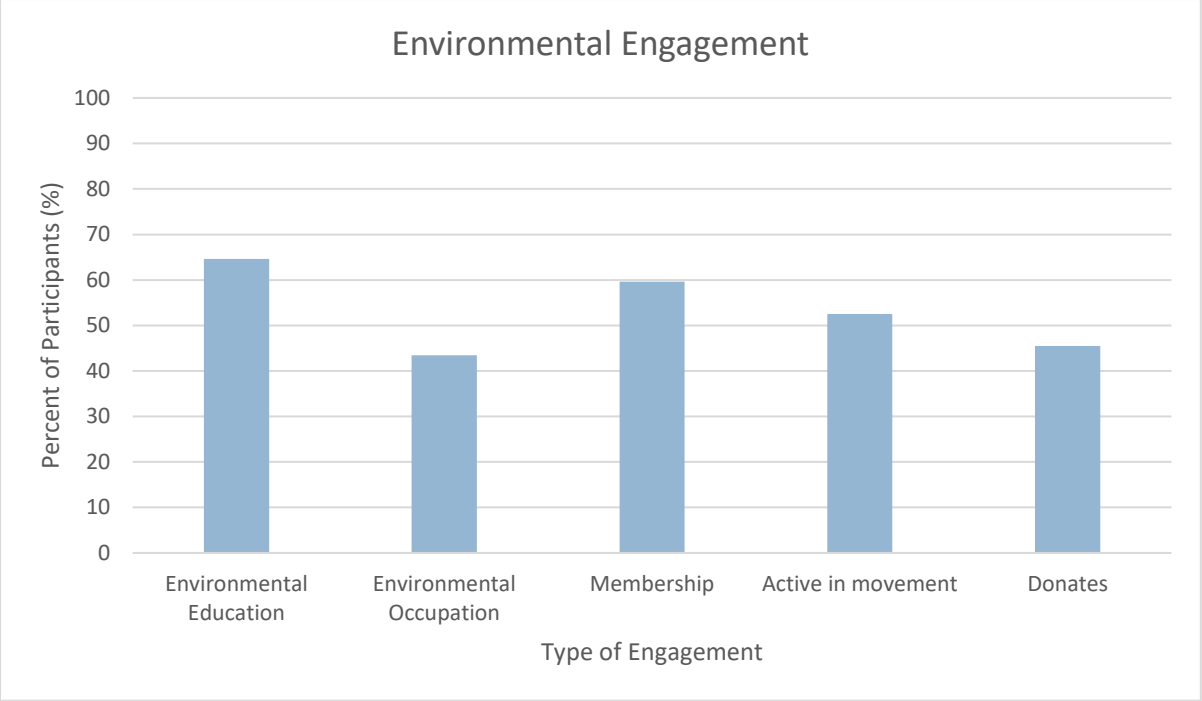

Figure 3: Shows the percentage of participants (n = 99) involved in different types of environmental engagement.

4.1.2 Social Desirability

The social desirability scores for the sample (n = 94) ranged from 3 to 23 (out of 33), with a mean of 14.7, a median of 15 and a standard deviation of 5.0. Scores between 0 to 8 are considered low, 9 to 19 average and 20 to 33 high, with high scores indicating a high social desirability bias (*Dare You Say What You Think? The Social-Desirability Scale*, n.d.).

4.1.3 Moral Disengagement

Moral disengagement scores ranged from 8 to 37 (min = 8, max = 56), with high scores indicating a high propensity to morally disengage. The mean was 16.8, the median was 16 and the standard deviation was 5.5. The distribution of the participants' scores can be seen in Figure 4. For the different mechanisms (scored 1-7), *Advantageous Comparison* showed the highest mean of 2.8, while *Distorting Consequences* had the lowest mean, 1.5, but no large difference between the different mechanisms was seen, which is in line with the idea of moral disengagement as a multifaceted construct rather than a multifactorial one (Moore et al., 2012).

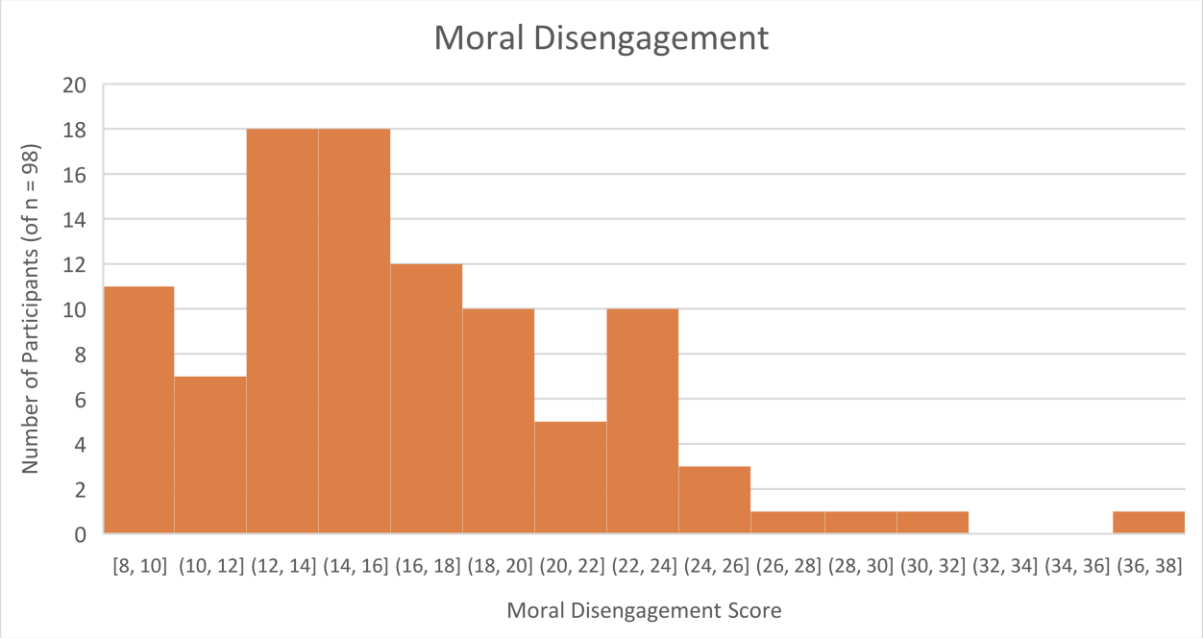

Figure 4: Shows the distribution of the participants' (n = 98) moral disengagement scores.

4.1.4 Responsibility

Industrialised countries were perceived as the actors with the most responsibility (*M* = 5.7, *Mdn* = 6, *SD* = 0.8), while developing countries were seen as being the least responsible for acting on climate change (*M* = 3.8, *Mdn* = 4, *SD* = 1.3), see Figure 5, which mirrors the results found by Stoll-Kleemann et al., (2022). Individuals placed second to last (*M* = 4.8, *Mdn* = 5, *SD* = 1.2). Here, 1 indicates no responsibility, while 6 indicates complete responsibility.

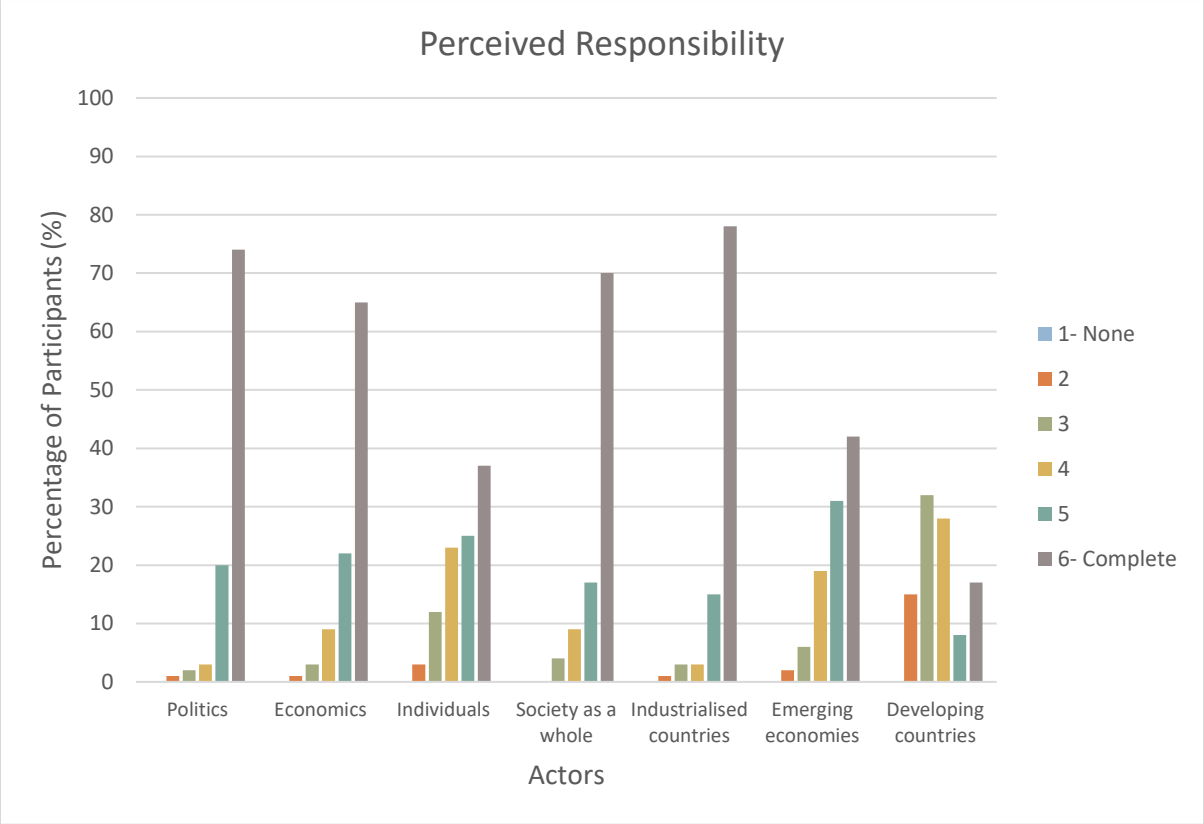

Figure 5: Shows how the participants (n = 100) perceived the responsibility of different actors, on a scale from 1 (none) to 6 (complete).

4.1.5 Past Luxury Emissions

As can be seen in Figure 6, the most common sources of luxury emissions that people engaged in were related to food, namely consuming dairy (86%), eggs (86%) or meat (62%). Buying new electronic devices (52%), flying (46%) and using non-renewable electricity (43%) were actions most commonly avoided due to environmental reasons, while having a living area above 60 m^2 per person (73%) or owning a second home (80%) were avoided due to other reasons. Not having an alternative to non-renewable heating (29 %) or electricity (20%) was seen, while nobody lacked alternatives to animal-based foods.

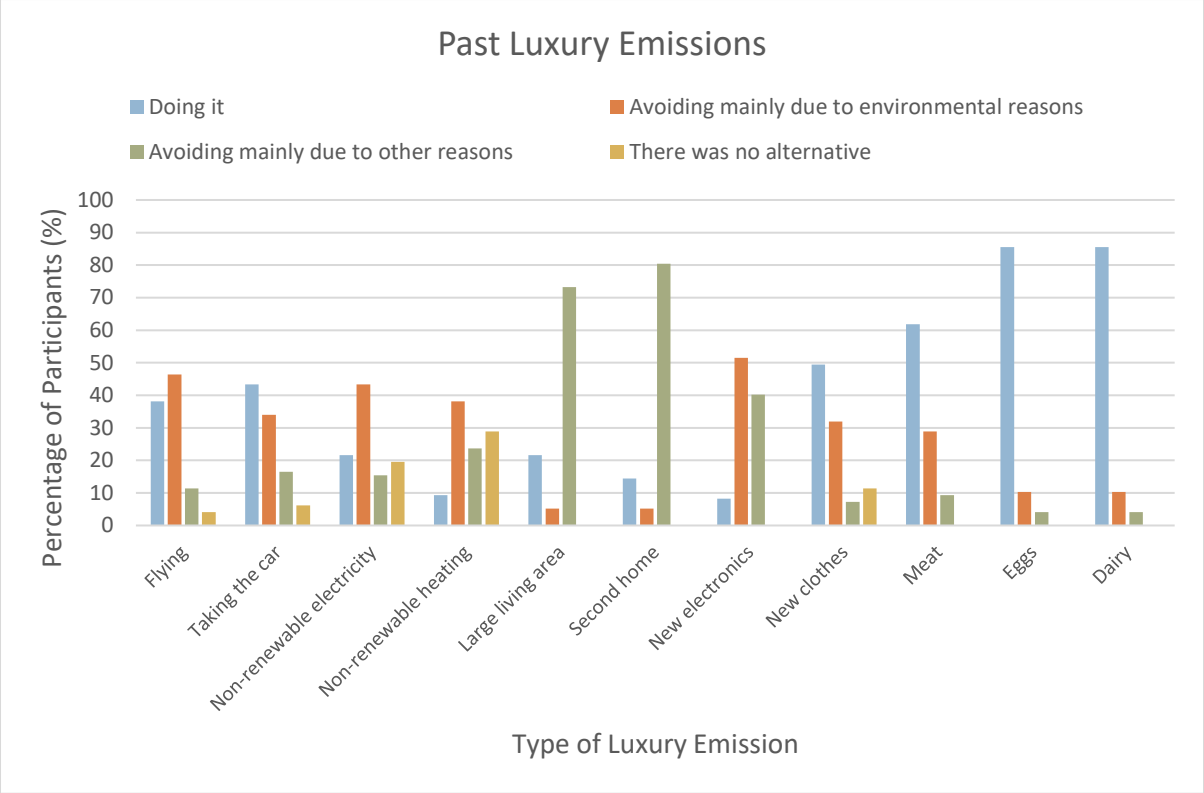

Figure 6: Shows the percentage of participants (n = 97) engaging with different sources of luxury emissions last year. Note that some questions did not include the option of "there was no alternative", namely those regarding a large living area, a second home and new electronics.

4.1.6 Past Luxury Emissions by Gender and Environmental Engagement

The second and third research questions aimed to examine whether environmentally engaged people differ from the general public in terms of luxury emissions, and whether gender had an impact on luxury emissions. In the sample, a small difference in luxury emission score by environmental score can be seen. A higher environmental engagement score was associated with lower mean- and median luxury emission scores, as seen in both Figure 7 and Table 1. However, the variance is relatively large.

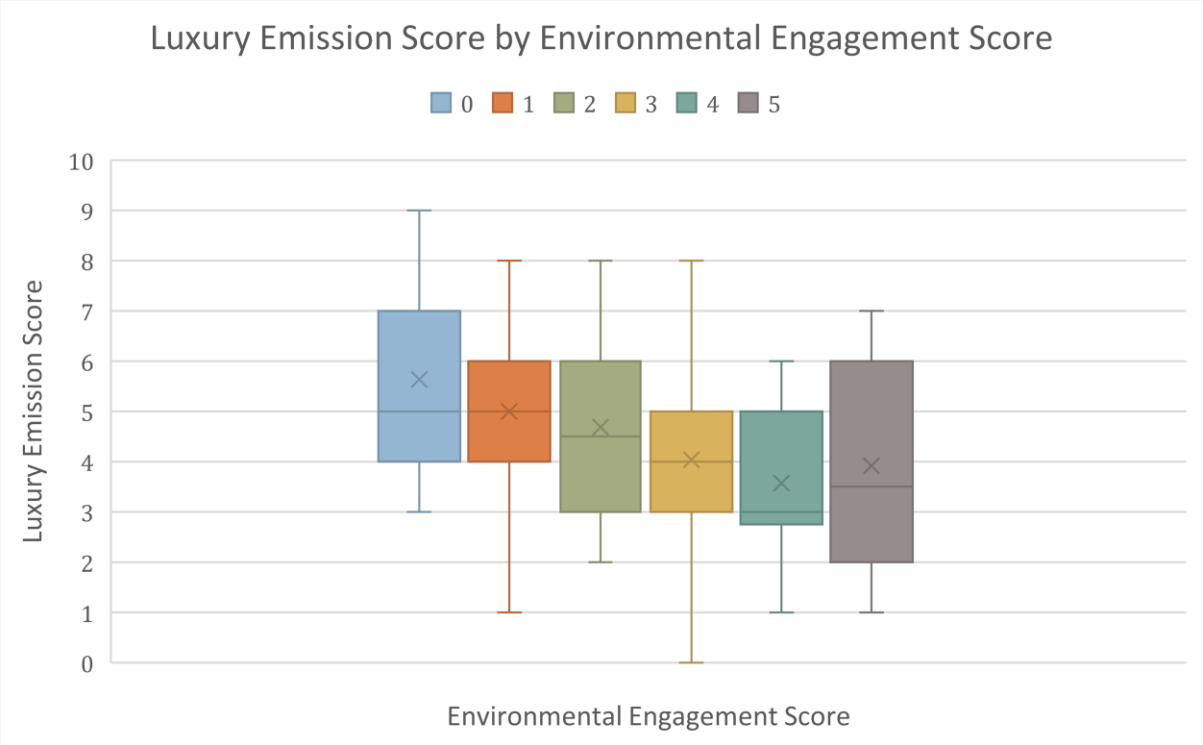

Figure 7: The boxplots show the luxury emission score by environmental engagement score. The median is marked with a horizontal line in the box and the mean is marked with a cross. (n = 96)

Table 1: Shows the range of environmental engagement scores and their associated mean, median, standard deviation and range of luxury emission scores.

Environmental Engagement Score	Luxury Emission Score			
	Mean	Median	Standard Deviation	Range
0	5.6	5.0	1.9	3 - 9
1	5.0	5.0	1.8	1 - 8
2	4.7	4.5	2.0	2 - 8
3	4.0	4.0	1.8	0 - 8
4	3.6	3.0	1.5	1 - 6
5	3.9	3.5	2.0	1 - 7

As can be seen in Figure 8, in the sample, women had a lower luxury emission score (*M* = 4, *Mdn* = 4.2, *SD* = 1.9) than men (*M* = 5, *Mdn* = 4.8, *SD* = 1.9), but the difference is small, especially considering the relatively large variance.

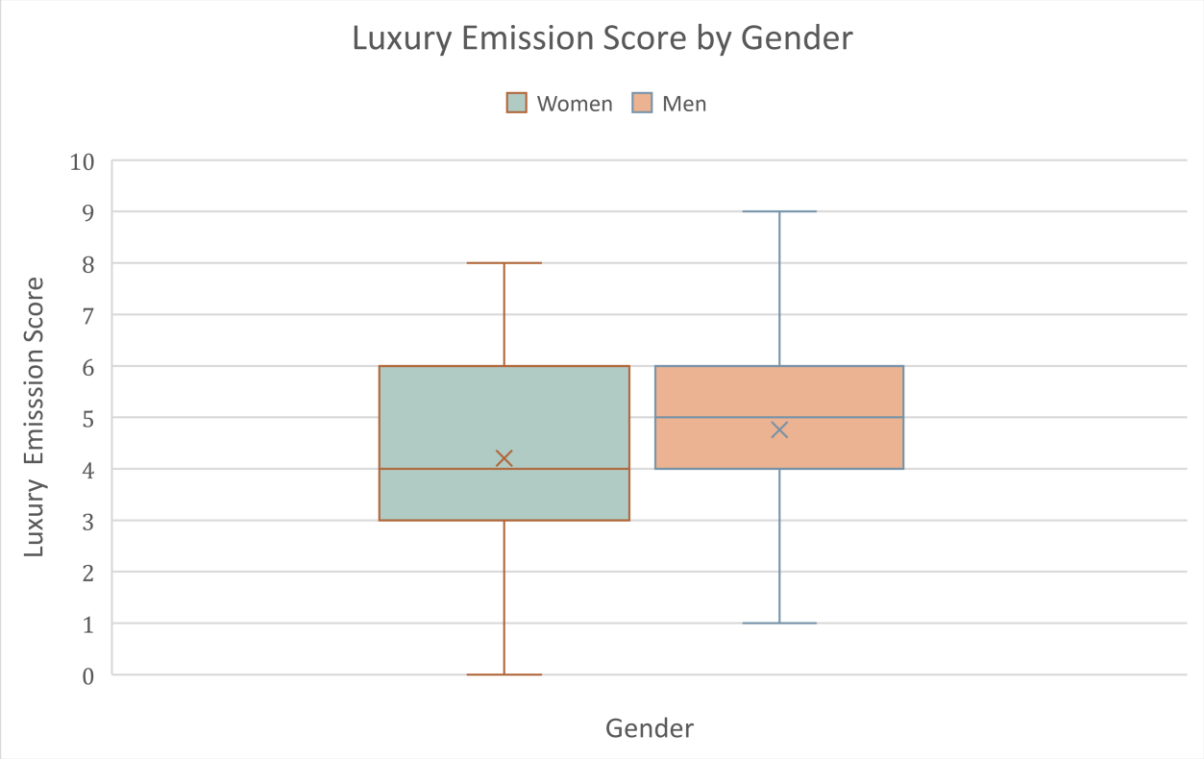

Figure 8: The boxplots show the luxury emission score for women (n = 58) versus men (n = 37). The median is marked with a horizontal line in the box and the mean is marked with a cross.

4.2 Correlations

The initial correlations between the nine independent variables and the dependent variable (luxury emission score), done in the exploratory phase, are presented in Table 2. For nominal and rank variables, box plots were analysed and due to large variance combined with small differences in means and medians, the variables education, occupation, income and city size were not included in the multiple regression analysis. No correlation *between* any of the remaining continuous variables were found, indicating no multicollinearity.

Table 2: Shows the data type, r, r^2 and strength of correlations done between the independent variables and the dependent variable: luxury emission score.

Independent variable	**Data type**	**Method used**	***r***	***r*²**	**Strength of correlation**	**Note**
Gender (X_1)	Nominal	Box plot				Added as 5th variable
Age (X_2)	Continuous	Pearson's correlation	.133	.018	Weak	Added as 3rd variable
Education (X_3)	Rank	Box plot				Not included in multiple regression analysis
Occupation (X_4)	Nominal	Box plot				Not included in multiple regression analysis
Income (X_5)	Rank	Box plot				Not included in multiple regression analysis
City Size (X_6)	Rank	Box plot				Not included in multiple regression analysis

Social Desirability (X_7)	Continuous	Pearson's correlation	-.186	.035	Weak	Added as 2nd variable
Moral Disengagement (X_8)	Continuous	Pearson's correlation	.117	.014	Weak	Added as 4th variable
Environmental Engagement (X_9)	Continuous	Pearson's correlation	-.318	.101	Medium	Added as 1st variable

For the multiple regression analysis, forward selection was used, adding variables in order of correlation strength during the exploratory phase, see Table 2. Then, the five models were evaluated using an approximation of Akaike Information Criterion (AICc), calculated using equation 1.

Equation 1: $AICc = n \times ln\left(\frac{SSE}{n}\right) + 2k + \frac{2k\,(k+1)}{n-k-1} + n \times ln\,(2\pi) + n$

where AICc is the approximated AICc, n is the number of observations and k is the number of parameters in the model.

The results from the multiple regression analysis can be seen in Table 3. Based on the low AICc, model 3 was determined to be the best fit.

Table 3: Shows the multiple linear regression for 5 different models, with luxury emission score as dependent variable. The table shows the independent variable coefficients, standardised coefficients, intercept coefficient, R^2, R^2_{Adj}, F, overall significance and AICc. The number of participants was n = 87. Gender was coded as X_1 =1 for women and X_1 =0 for men.

	Dependent Variable: Luxury Emission Score				
Independent variable	Model 1: coefficients	Model 2: coefficients	Model 3: coefficients. Standardised coefficients in parenthesis	Model 4: coefficients	Model 5: coefficients
Environmental Engagement (X_9)	-0.371	-0.337	-0.362 (-0.291)	-0.363	-0.345
Social Desirability (X_7)		-0.055	-0.069 (-0.184)	-0.064	-0.068
Age (X_2)			0.026 (0.213)	0.026	0.025
Moral Disengagement (X_8)				0.017	0.009
Gender (X_1)*					-0.426
Intercept. Standardised intercept in parenthesis	5.420	6.123	5.421 (-0.016)	5.046	5.484
R^2	.089	.109	.143	.145	.156
$R^2_{Adj.}$	.078	.087	.112	.103	.104
F	8.284	5.113	4.618	3.472	2.996
Overall significance p	.005	.008	.005	.011	.016
AICc	352.96	353.15	351.86	353.88	354.98

For Model 3, the regression equation was as follows;

Equation 2: $Y = 5.421 - 0.362\,X_9 - 0.069\,X_7 + 0.026\,X_2$

Where Y is luxury emission score, X_9 is environmental engagement score, X_7 is social desirability score and X_2 is age in years.

For Model 3, the standardised coefficients were also calculated to enable comparison between variables. These can be found in the parentheses in Table 3. The regression equation, using standardised coefficients, was as follows:

Equation 3: $Y = -0.016 - 0.291\,X_9 - 0.184\,X_7 + 0.213\,X_2$

Where Y is luxury emission score, X_9 is environmental engagement score, X_7 is social desirability score and X_2 is age in years. The coefficients are standardised.

As can be seen in Equations 2 and 3, both environmental engagement and social desirability were weakly associated with lower luxury emissions, while age was weakly associated with higher luxury emissions. An increase in environmental engagement score by 1 lowered the luxury emission score by 0.362, similarly to how an increase by 1 in social desirability score lowered the luxury emission score by 0.069. The one factor that increased the score was age, where every increase in age by 1 year led to an increase in luxury emission score by 0.026. This can be seen in Equation 2. Equation 3 shows that environmental engagement was the independent variable measured that to the highest degree explains the variance in luxury emission score, with age placing second and social desirability third.

R^2 was .143, meaning that 14.3 % of the variance in the sample (n = 87) was explained by the three independent variables in the model, see Table 3. Overall, the 3-variable model was significant (for $\alpha = .05$) at p = .005, and with a F(3,83) of 4.618, and while environmental engagement was significant as a variable (p = .006), social desirability (p = .095) and age (p = .071) were not.

The independent variables education, occupation, income, city size, gender and moral disengagement are not included in the model. Although moral disengagement in the initial linear regression test, see Figure 9, showed a weak correlation with the luxury emission score (r = .117, r^2 = .014), this correlation was not strong enough to include moral disengagement in the final model.

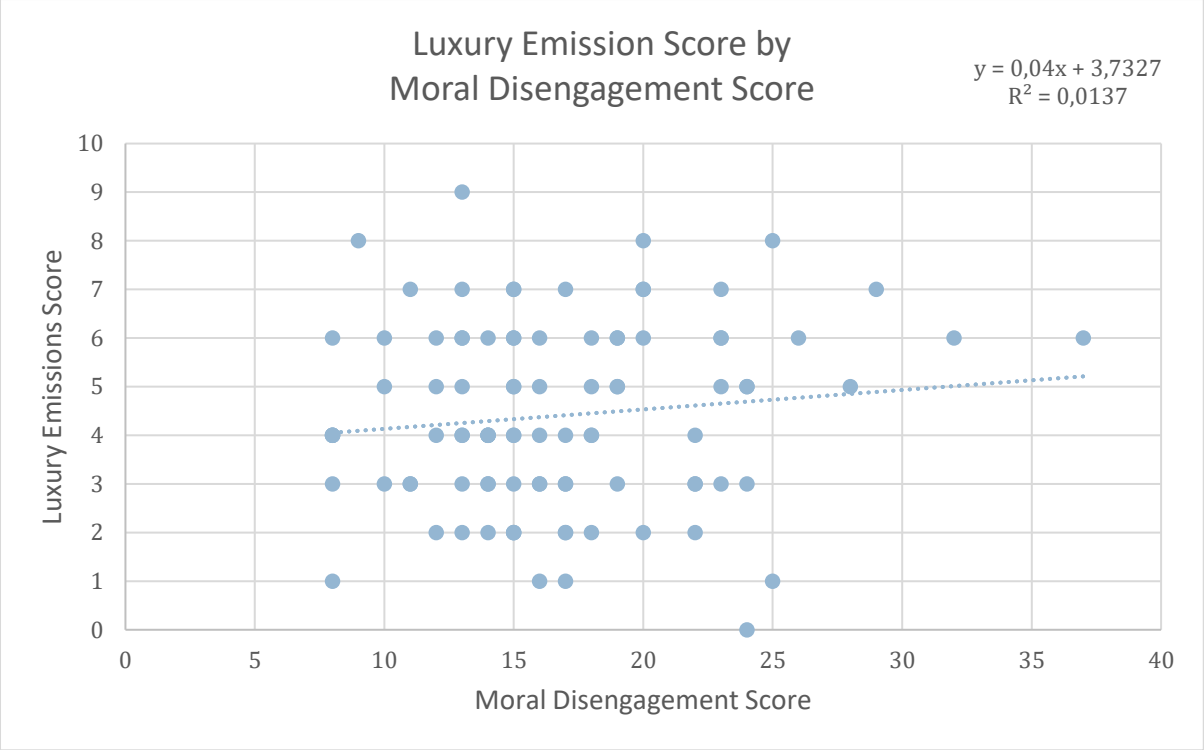

Figure 9: Shows the correlation and correlation equation for a simple linear regression between moral disengagement and luxury emission (n = 98).

5 Discussion

5.1 Interpretation and Implications of Results

To answer RQ1 (*What is the relationship between moral disengagement in general (MD-G) and past luxury emissions?*): although moral disengagement initially showed a weak correlation with past luxury emissions, moral disengagement was not included in the final multiple linear regression model as a variable and thus did not predict past luxury emission in this sample, contrary to Hypothesis 1.

In answer to RQ2 *(Do environmentally engaged people differ from the general public in terms of luxury emissions?)* and RQ3 *(Is there a difference between men and women in terms of luxury emissions?)*: gender was not found to predict past luxury emissions, but environmental engagement was the variable that to the largest extent predicted past luxury emissions. It was weakly negatively correlated to past luxury emissions, meaning that higher environmental engagement somewhat predicted lower past luxury emissions. So was social desirability, while age was weakly positively correlated to past luxury emissions. In total, these three factors explained 14.3 % of the variance in past luxury emissions in the sample, showing that there are many other factors that determine luxury emissions. The overall model was significant, but only environmental engagement was significant as a variable in the model. These results confirm Hypothesis 2, but not Hypothesis 3.

There are several things to note about the results. Social desirability's correlation to luxury emissions is likely a reflection of underreporting in order to appear 'good' in front of the researcher, rather than actual low emissions, showing why social desirability bias should be controlled for. That environmental engagement weakly predicts luxury emissions poses the question of why that is the case. Are there confounding variables such as underlying qualities that increase individuals' propensity to engage in environmental questions on both a collective level (environmental engagement), and on an individual level (past luxury emissions)? It is possible that some of the variables that affect pro-environmental behaviour (in this case limiting luxury emissions), outlined in the theory section, also impact environmental engagement. Or, maybe reducing one's individual emissions should be seen as another facet of environmental engagement, and thus be included in its measurement. Most importantly, a correlation between environmental engagement and past luxury emissions does not equal causation. Another thing to note is that environmental engagement is the only of the predicting variables that is possible (age) or relevant (social desirability) to affect.

That no correlation between moral disengagement and luxury emissions was found in this study, does not mean that it does not exist. Several other studies have found that moral disengagement correlates with pro-environmental and high-carbon behaviour (Leviston & Walker, 2021; Nicolai et al., 2022; Stoll-Kleemann et al., 2023). It is possible that no correlation was found due to the biassed sample, which in general scored low on moral disengagement. This study would have benefited from using a new scale developed especially for measuring the propensity to morally disengage in high carbon behaviour (MD-HCB) (Stoll-Kleemann et al., 2023). Scales that are more closely connected to the context of the attitude they want to measure tend to have a higher predictive power, and scales measuring moral disengagement should preferably be "tailored to activity domains." (Bandura, 2016, p.26). However, the scale has currently only been validated in German, and translating and validating the scale in Swedish or English was considered outside the scope of this study.

5.2 Limiting Moral Disengagement and Fostering Moral Engagement

Despite moral disengagement not correlating with luxury emissions in this study, previous research on the topic, combined with the inherent justice- and morality aspects of climate change, makes the case for why moral engagement is still relevant. That brings us to the fourth research question: *What strategies can be used to foster moral engagement?*

Increasing moral engagement is not just about limiting moral disengagement. Peeters et al. (2015) outlines three approaches to address the lack of moral engagement and -responsibility for climate change: *tackling the propensity for moral disengagement, increasing moral motivation* and *addressing the underlying reasons for moral disengagement* (Peeters et al., 2015, p.108, 113 & 116), of which an examination can be found below. They argue that this important work should be done by a wide variety of communicators: media, politicians, religious leaders, journalists, educators, opinion leaders, scientists, researchers and non-governmental organisations (Peeters et al., 2015).

5.2.1 Limiting the Propensity to Morally Disengage

Research shows that self-compassion is negatively correlated with moral disengagement, so efforts to increase self-compassion could be one strategy (Yang et al., 2020). Self-compassion, with its three components self-kindness, common humanity and mindfulness (Yang et al., 2020), has been linked to a desire to take responsibility, avoid immoral behaviour and improve oneself (Breines & Chen, 2012; Leary et al., 2007). These qualities combined with a stable sense of self-worth seems to enable self-compassionate people to realistically evaluate their own behaviour, without being defensive, therefore possibly making moral disengagement mechanisms less necessary (Yang et al., 2020).

Spreading awareness could be another strategy. Learning about moral disengagement gives people the tools to recognize it in themselves, which could affect their likelihood of using it, especially for those who strongly value moral integrity (Peeters et al., 2015, 2019). It helps people take ownership of their actions, which could lead to changing their behaviour so it is more aligned with their moral convictions, as morality is an important motivator (Peeters et al., 2015; Wolrath Söderberg & Wormbs, 2019).

Knowing that one is causing harm to others limits peoples' tendency to morally disengage (Kish-Gephart et al., 2014). Humans are in general sensitive to others suffering, an important evolutionary trait, and most commonly respond with compassion (Haidt & Graham, 2007). Humanisation of victims breeds moral engagement, and limits the willingness to cause harm, especially if it is combined with individual responsibility (Bandura, 2016; Bandura et al., 1996).

5.2.2 Increasing Moral Motivation

Strategies to increase moral motivation connect back to the theory of moral behaviour, with high moral motivation increasing the perceived cost of behaving immorally, thus making it less likely (Tsang, 2002).

Focus on Impacts

By pointing to the effects of climate change that we are already seeing and by using close-to-home examples such as the heatwaves in Sweden in 2018 (Wilcke et al., 2020), or the floods in Germany in 2021 (Else, 2021), people get to see climate change as affecting things they care about (Peeters et al., 2015; Wang et al., 2018; Wolrath Söderberg & Wormbs, 2019).

Personal stories from those affected can be a powerful tool and by invoking feelings of shared humanity, moral disengagement mechanisms such as dehumanisation might be employed less (Markowitz & Shariff, 2012; Moore et al., 2012). This could increase peoples' sense of moral responsibility, especially if climate change is framed as a moral question (Peeters et al., 2015; Stoll-Kleemann et al., 2022).

Create a Shared Sense of Responsibility

One strategy is to help people draw the connection between their behaviour, the resulting emissions, and the real impact these emissions have on other peoples' life (Peeters et al., 2015; Stoll-Kleemann et al., 2022). One's contribution to climate change can seem miniscule, but the combination of these tiny individual contributions result in the climate change we see today (Peeters et al., 2015, 2019). By recognizing that, we also recognize that we have a moral responsibility to minimise our emissions in order to avoid harm (Peeters et al., 2015). This builds individual accountability, and could discourage the use of moral disengagement mechanisms such as displacement/diffusion of responsibility and attribution of blame (Moore et al., 2012). The distinction of subsistence- and luxury emissions can be useful in this conversation of responsibility.

Seeing others act on climate change can in turn inspire action, push positive norms and lead to behaviour change in others (Fritsche & Masson, 2021; Markowitz & Shariff, 2012; Stoll-Kleemann et al., 2022). Storytelling, through for example long-running series on TV or radio, designed with social change in mind, have been shown to help model desirable behaviour, and inspire the viewers to act (Singhal et al. (2004) in Bandura (2016)).

Use Virtues, Values and Moral Messaging

Virtues such as humility, temperance (restraint/moderation), cooperativeness and respect for nature can be used to incentivise moral behaviour and -judgement (Jamieson, 2014; Peeters et al., 2015). Jamieson (2014) highlights mindfulness (to in a balanced way be aware of one's thoughts and feelings) as a virtue that helps people stop and reconsider their own actions. Because mindfulness is non-judgemental, it can limit the need to "ignore, explain away, or rationalize ideas that might be

potentially threatening to the self" (Ruedy & Schweitzer, 2010, p.76) a description well aligned with moral disengagement mechanisms. Interestingly, mindfulness also connects back to self-compassion and has been shown to increase ethical decision making (Ruedy & Schweitzer, 2010).

A moral message can be adapted to the fit values held by certain groups. Globally, liberals tend to be more concerned with the moral values of harm/care and fairness/reciprocity, while conservatives value all five (Harm/Care, Fairness/Reciprocity, Ingroup/Loyalty, Authority/Respect, and Purity/Sanctity), something that leads to cultural and political disagreement (Graham et al., 2011; Haidt & Graham, 2007). Targeted communication could thus be to talk with conservatives using values such as purity/sanctity or group loyalty (Haidt & Graham, 2007), for example by talking about the destruction of nature as "humans profaning the sanctity of the natural world" (Markowitz & Shariff, 2012, p.245). Another example is religious leaders, such as Pope Francis, talking about nature conservation and environmental engagement as an act of stewardship (Markowitz & Shariff, 2012; Nisbet, 2009; Pope Francis, 2019)

One should be careful to not use extrinsic values, which are focused on external motivators such as wealth, social status or authority (Holmes et al., 2012; Markowitz & Shariff, 2012), to encourage moral judgement. This is because extrinsic values are associated with a lower environmental concern (Milfont et al., 2006; Schultz et al., 2005), as well as prejudice (Sawyerr et al., 2005), manipulative behaviour (McHoskey, 1999) and unhelpfulness (Sawyerr et al., 2005). There is also evidence that personal gain is strongly and positively related to moral disengagement (Kish-Gephart et al., 2014).

5.2.3 Work with Underlying Reasons for Moral Disengagement

One way to address moral disengagement is to help people examine the motivations competing with the motivation to behave morally, and whether it is possible to fulfil these competing motivations in a way that is still aligned with their moral standards (Peeters et al., 2015). Here, a critical examination of the liberal-capitalist idea of the pursuit of happiness through consumerism is a good start (Peeters et al., 2015). Although wellbeing and consumerism are currently intertwined (Fanning & O'Neill, 2019), that does not have to be the case (Kallis et al., 2018; Matthey, 2010; Peeters et al., 2019).

5.2.4 A Short Note on Communication

Many of the suggestions above are based on the strategy of communication, as communication, language and framing can both reinforce existing paradigms or challenge them (Ives et al., 2020; Nisbet, 2009). However, effective communication is complex, and is in itself a field of research. It requires careful deliberation of not only the message, but also how it can be tailored to be convincing

to and reach different audiences (Nisbet, 2009). Communication is also just one of many strategies that could be useful to foster engagement, and is unlikely to be sufficient on its own (Ramstetter et al., 2023). Other potential strategies could be the use of policies, regulations and other uses of political power, changes to economic- and political structures or the use of education. Additionally, many of the suggestions on decreasing moral disengagement and increasing moral responsibility are speculative. There is still little research in the field (Peeters et al., 2015), and more research should be conducted that tests these possible strategies.

5.3 The Distribution of Responsibility

Most participants saw industrialised countries as those most responsible for acting on climate change, while developed countries were seen as least responsible. Considering that industrialised countries have caused the majority of greenhouse gas emissions in the atmosphere (Friedlingstein et al., 2022), that distribution of responsibility seems fair. Individuals however, were seen as the second least responsible. With one of the mechanisms for moral disengagement being *displacement of responsibility,* this plays into a problem discussed by Stoll-Kleemann & O'Riordden (2020): it is difficult to determine where the boundary between *displacement of responsibility* and 'proper attribution of responsibility' lays.

5.3.1 When No One Takes Responsibility

It is true that climate change is a problem we are collectively responsible for, that would best be handled by states and people in power. But what happens when these institutions are reluctant to take on that responsibility, and individuals don't see emission reduction as their responsibility? By leaving the responsibility for greenhouse gas emissions undistributed we "fall into the familiar trap whereby no particular person or group of persons has a defined obligation, and each can excuse him- or herself from taking steps to combat climate change by passing the responsibility to someone else." (Miller, 2007, p.120). Thus, there is a need to assign responsibility, and it seems reasonable that individuals should carry the moral responsibility for the harm we cause others by our luxury emissions. That climate change is a collective issue, that requires collective solutions, does not minimise the fact that many individuals have the agency to make personal choices that would lower their contribution to climate change. Additionally, to solely focus on states obscures the differences in emissions between citizens within a state (Walker, 2012).

5.3.2 Individual Responsibility AND Collective Responsibility

However, as Peeters et al put it: "In our view, effectively reducing total greenhouse gas emissions will depend on substantial actions undertaken by *all actors* (including international institutions, national

and regional governments, corporations, civil society organisations, and individuals) who have agency in reducing greenhouse gas emissions, and *to the extent that these actors have this kind of agency."* (Peeters et al., 2019, p.427). Individual responsibility does not take away the responsibility that other actors, such as people in power, should carry, especially since they have the resources to enact systemic change.

We should also acknowledge that social structures impact individual emissions as well as contribute with their own emissions. For example, it is easier to collectively reduce consumption, rather than individually, due to norms around consumption, and the connection between consumption and feelings of superiority and self-respect (Lichtenberg, 2014). In this survey, some respondents mentioned having no access to low emission alternatives for heating and electricity, as they did not own their housing. To make it easier for individuals to lower their luxury emissions, increased access to information and alternatives, as well the power to pick green alternatives are important, which relies on structural changes.

5.3.3 What About Collective Action?

A focus on individual moral responsibility is not necessarily in opposition to collective action, as morality is a strong motivator for collective action (Uysal et al., 2022; Vilas & Sabucedo, 2012; Wang et al., 2018). Individual action can also show politicians that there is strong support for policies related to emission reduction (Peeters et al., 2019). Finally, I would argue that we are morally responsible to both lower our individual emissions, as well as engaging collectively.

5.3.4 Why Assigning Moral Responsibility Matters

The assignment of moral responsibility raises the question of whether convincing people of their responsibility actually leads to changes in behaviour. As previously mentioned in the theory section, internal factors such as motivation, an understanding of humans' environmental impact, feeling a sense of responsibility, emotional involvement, an internal locus of control and pro-environmental values are all important factors shaping pro-environmental behaviour. There is also support for moral emotions as a motivator for pro-environmental behaviour (Rees et al., 2015). Further, a conversation around climate justice is important as justice is a strong motivator for most people (Nicolai et al., 2022). However, highlighting the injustice of climate change and assigning individual moral responsibility is just one of many steps needed to increase the engagement in climate change mitigation.

5.4 Limitations and Suggestions for Improvement

The use of a convenience sample comes with several limitations, such as sampling bias, meaning that only particular groups of people participate (Bryman, 2018). There is also a motivational bias, as it is mainly people who are interested because of the topic or the researcher, that respond to the survey (Bryman, 2018; Stratton, 2021). Some demographic groups were excluded by the use of an online survey (those lacking internet, a computer or the skills to use one), others by the use of English (Bryman, 2018). As it was impossible to track non-response, no information about the people who saw the survey but chose to not respond exists.

Because the sample is biased, the study has low generalisability and no interferences about the population 'Swedish residents' should be made based on the results. It is also possible that the biased sample led to correlations between variables were missed due to the lack of variance within a variable (for example, the variable education being very skewed), the so-called *restriction of range*-problem (Borg & Westerlund, 2006). To improve the research quality, a random sampling technique should be used in the future.

The survey used mainly existing scales, but for both environmental engagement and luxury emissions, new items were constructed. The environmental engagement items were scored equally, but it is questionable whether they equally represent environmental engagement: an activist is arguably more environmentally engaged than someone who is only a member of an environmental organisation. Therefore, the measurement could benefit from another point system. Similarly, the items for luxury emissions were scored equally, but it should maybe be reconsidered. Furthermore, the items would have to be adapted if used in other countries than Sweden, as available alternatives vary from country to country. Additionally, some participants wished for more nuanced options for the luxury emission items. There is, for example, a big difference between always using your car versus taking a car a few times a year, which was not reflected in the answers options.

5.5 Future Research

A suggestion for further research is how moral disengagement operates on the individual- versus collective level, which poses several questions: How can moral disengagement on a collective level be studied? What justifications for renouncing responsibility are used by people in power, organisations and nations in negotiations around climate change? Can these be seen as displays of moral disengagement?

Furthermore, with the new scale measuring the propensity to morally disengage in high carbon behaviour (MD-HCB), there is potential to more closely explore its connection to pro-environmental behaviour and luxury emissions. Considering the lack of research around what strategies can be used to lower the propensity to morally disengage, this too is an important gap to fill. Here, studies with an experimental design would be particularly useful. As environmental engagement was found to be the largest predictor for luxury emissions in this study, this also warrants further studies examining this connection.

6 Conclusion

This thesis used concepts from behavioural psychology to examine a complicated sustainability issue, namely the lack of individual action on reducing greenhouse gas emissions. It aimed to highlight the question of moral responsibility for our emissions. By combining Shue's distinction of luxury emissions and subsistence emissions, with Bandura's theory of moral disengagement, it examined the relationship between past luxury emissions and other variables such as moral disengagement, environmental engagement and gender. It also explored potential strategies for increasing moral engagement.

The study found no significant correlation between moral disengagement and past luxury emissions. It did however, find that environmental engagement, social desirability and age weakly correlated with reported luxury emissions, the first two being negatively correlated and the third one being positively correlated. It also saw that potential ways to limit the propensity to morally disengage is increasing self-compassion, spreading awareness of moral disengagement and humanising victims of climate change. It further presents several strategies for increasing moral responsibility, such as helping draw the connection between behaviour and harm to others, encouraging other virtues such as mindfulness and tailoring the moral message to the intended audience.

Despite the fact that no correlation between moral disengagement and past luxury emissions was found in this study, previous studies show that moral disengagement does play a role in determining people's climate related behaviour, and that behavioural psychology is important in understanding human-nature interactions. By increasing our knowledge of what makes people act for the greater good and which barriers stand in their way, we gain important keys to creating transformative change on an individual- and system level.

One contribution of this thesis is the attempt to operationalise and measure the concept of luxury emissions. This study, with its sample of Swedish residents, also adds to previous research on the topic

of moral disengagement and climate change, an area that is still scarcely studied. This study is, to my knowledge, the only quantitative study which combines the ideas of Shue with Bandura's theory on moral disengagement. Although no correlation between luxury emissions and moral disengagement was found in this study, this thesis can hopefully serve as inspiration for future research on the overlap between climate change, morality, responsibility and behaviour. Especially interesting would be studies on how moral disengagement operates on a collective level, particularly in the context of climate change. Finally, I hope this thesis can be an invitation to look back at ourselves, our luxury emission and the moral responsibility we have for them.

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Appendix 1: Survey

Below is the introductory letter and the questions included in the survey.

Cognitive Processes and Environmental Behaviour

Welcome!

Are you over 18 and live in Sweden?

If you are, I would be thankful if you could spare some time and answer this survey.

It aims to examine the connection between cognitive processes and environmental behaviour, with the hope of expanding the knowledge on what makes people behave in environmentally friendly ways. It includes questions regarding socio-demographic variables, involvement with environmental organisations, environmental behaviour, personal attitudes and responsibility. The collected data will be analysed and used in my Master's thesis in Environmental Studies and Sustainability Science at Lund University and the thesis will be published on a public website managed by The Lund University Library.

The survey is anonymous and your answers will not be possible to trace back to you. The collected data will be stored safely and treated in a way that ensures no unauthorised people can access it, in line with GDPR legislation and ethical standards. The data will only be used for academic purposes. By participating in this survey, you consent to your data being collected and used. Participation is voluntary, and you can withdraw your consent without consequences at any time by contacting me at the email below. The survey is expected to take around 15 minutes to answer.

If you have further questions, don't hesitate to email me at ma3365ha-s@student.lu.se.

Thank you, I really appreciate your participation.

Regards,
Maja Håkansson, Master's Student

Do you consent to participating in this survey and to the collection of your personal data, which will be anonymised and used for academic purposes?

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1. **Do you currently live in Sweden?**
   - Yes
   - No

2. **Which is your gender identity?**
   - Woman

- Man
- Non-binary
- Prefer not to say

3. How old are you?

____

4. Which is your highest educational level?

- Primary and lower secondary education, less than 9 years (Förgymnasial utbildning kortare än 9 år)
- Lower secondary education, 9 years (Förgymnasial utbildning, 9 år)
- Upper secondary education less than 3 years (Gymnasial utbildning kortare än 3 år)
- Upper secondary education 3 years (Gymnasial utbildning, 3 år)
- Post-secondary education, less than 3 years (Eftergymnasial utbildning, kortare än 3 år)
- Post-secondary education, 3 years or more (Eftergymnasial utbildning, 3 år eller längre)
- Post-graduate education (Forskarutbildning)

5. What is your main occupation?

- Student
- Employed
- Self-employed
- Currently unemployed
- Retired
- Sick or unable to work
- None of the above

6. What was your total earned income last year (2022)?

This includes the income from employment and self-employment, as well as pension and taxable benefits from the social insurance system such as sickness benefits, parental benefits or unemployment insurance (a-kassa). It does not include tax-exempt benefits such as housing allowance, child benefits, financial aid or student aid, or capital income (such as the profit from selling or renting out a home, interest from a savings account or the dividends from shares or funds).

- Less than 99 999 kr
- 100 000 -199 999 kr
- 200 000- 299 999 kr
- 300 000- 399 999 kr
- 400 000- 499 999 kr
- 500 000- 599 999 kr
- 600 000- 699 999 kr
- 700 000- 799 999 kr
- 800 000- 899 999 kr
- 900 000- 999 999 kr
- More than 1 000 000 kr

7. **Where do you currently live?**
    - In or near the centre of a large city with more than 100,000 inhabitants
    - On the outskirts of a large city with more than 100,000 inhabitants
    - In a medium-sized city with about 20,000 to 100,000 inhabitants
    - In a small town with under 20,000 inhabitants
    - In a village or on the countryside

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8. **Has any of your education been related to the environment or sustainability?**
    - Yes
    - No
    -
9. **Is your current main occupation related to the environment or sustainability?**
    - Yes
    - No

10. **Are you a member of an environmental organisation?**
    This includes both Swedish and international organisations, for example Naturskyddsföreningen, Greenpeace, Fridays for Future, Extinction Rebellion and WWF, as well as other organisations working with the protection or monitoring of the environment.
    - Yes
    - No

11. **Are you actively engaged in the environmental movement, for example by being politically engaged, by attending protests or strikes, or by other forms of activism?**
    - Yes
    - No

12. **Do you regularly donate money to an environmental organisation?**
    - Yes
    - No

Next are some questions about your past behaviour. Read each question and decide which answer is most in line with your behaviour last year, meaning 2022.

13. **Last year, did you travel by airplane?**
    Do not include work-related trips
    - Yes
    - No, avoided mainly due to environmental reasons

- No, avoided mainly due to other reasons
- An alternative mode of transport was not available and the trip was unavoidable

14. **Last year, did you use a car for trips that had a feasible alternative mode of transport, such as walking, biking or using public transport?**
    - Yes
    - No, avoided mainly due to environmental reasons
    - No, avoided mainly due to other reasons
    - An alternative mode of transport was not available

15. **Last year, did you buy non-renewable electricity, even though renewable electricity was available?**
    Examples of non-renewable electricity are oil-, gas-, peat-, coal- or nuclear generated electricity. Examples of renewable electricity are solar-, hydro-, bio- or wind power.
    - Yes
    - No, avoided mainly due to environmental reasons
    - No, avoided mainly due to other reasons
    - A renewable alternative was not available

16. **Last year, did you use non-renewable energy to heat your home, even though renewable options were available?**
    Examples of non-renewable options are gas, oil or electricity from non-renewable sources (see above). Examples of renewable options are green electricity (see above), heat-pumps, biofuel, district heating (often biofuel based) and solar heating.
    - Yes
    - No, avoided mainly due to environmental reasons
    - No, avoided mainly due to other reasons
    - A renewable alternative was not available

17. **Last year, did you live in a home with a living area of more than 60 m^2 per person?**
    - Yes
    - No, avoided mainly due to environmental reasons
    - No, avoided mainly due to other reasons

18. **Last year, did you own (partly or fully) more than one house, for example a vacation home (sommarstuga/fritidshus)?**
    - Yes
    - No, avoided mainly due to environmental reasons
    - No, avoided mainly due to other reasons

19. **Last year, did you buy a new electronic device (such as a laptop or a phone) to replace an old device, even though the old device was still working?**
    - Yes
    - No, avoided mainly due to environmental reasons
    - No, avoided mainly due to other reasons

20. **Last year, did you buy new clothes despite having access to second hand options?**
    - Yes
    - No, avoided mainly due to environmental reasons
    - No, avoided mainly due to other reasons
    - Second hand options were not available

21. **Last year, did you eat meat?**
    - Yes
    - No, avoided mainly due to environmental reasons
    - No, avoided mainly due to other reasons
    - Meat-free options were not available

22. **Last year, did you consume eggs?**
    - Yes
    - No, avoided mainly due to environmental reasons
    - No, avoided mainly due to other reasons
    - Egg-free options were not available

23. **Last year, did you consume dairy?**
    - Yes
    - No, avoided mainly due to environmental reasons
    - No, avoided mainly due to other reasons
    - Dairy-free options were not available

Listed below are a number of statements concerning personal attitudes. Read each item and check the box that represents how much you agree with the statement. There are no right or wrong answers. ***(1. Strongly disagree 2. Disagree 3. Somewhat disagree 4. Neither agree or disagree 5. Somewhat agree 6. Agree 7. Strongly agree)***

It is okay to spread rumors to defend those you care about.

Taking something without the owner's permission is okay as long as you're just borrowing it.

Considering the ways people grossly misrepresent themselves, it's hardly a sin to inflate your own accomplishments a bit.

People shouldn't be held accountable for doing questionable things when they were just doing what an authority figure told them to do.

People can’t be blamed for doing things that are technically wrong when all their friends are doing it too.

Taking personal credit for ideas that were not your own is no big deal.

Some people have to be treated roughly because they lack feelings that can be hurt.

People who get mistreated have usually done something to bring it on themselves.

Listed below are a number of statements concerning personal attitudes and traits. Read each item and decide whether the statement is true or false as it pertains to you personally. ***(True/False)***

1. Before voting I thoroughly investigate the qualifications of all the candidates.

2. I never hesitate to go out of my way to help someone in trouble.

3. It is sometimes hard for me to go on with my work if I am not encouraged.

4. I have never intensely disliked anyone.

5. On occasion I have had doubts about my ability to succeed in life.

6. I sometimes feel resentful when I don't get my way.

7. I am always careful about my manner of dress.

8. My table manners at home are as good as when I eat out in a restaurant.

9. If I could get into a movie without paying and be sure I was not seen I would probably do it.

10. On a few occasions, I have given up doing something because I thought too little of my ability.

11. I like to gossip at times.

12. There have been times when I felt like rebelling against people in authority even though I knew they were right.

13. No matter who I'm talking to, I'm always a good listener.

14. I can remember "playing sick" to get out of something.

15. There have been occasions when I took advantage of someone.

16. I'm always willing to admit it when I make a mistake.

17. I always try to practice what I preach.

18. I don't find it particularly difficult to get along with loud mouthed, obnoxious people.

19. I sometimes try to get even rather than forgive and forget.

20. When I don't know something I don't at all mind admitting it.

21. I am always courteous, even to people who are disagreeable.

22. At times I have really insisted or having things my own way.

23. There have been occasions when I felt like smashing things.

24. I would never think of letting someone else be punished for my wrongdoings.

25. I never resent being asked to return a favour.

26. I have never been irked when people expressed ideas very different from my own.

27. I never make a long trip without checking the safety of my car.

28. There have been times when I was quite jealous of the good fortune of others.

29. I have almost never felt the urge to tell someone off.

30. I am sometimes irritated by people who ask favors of me.

31. I have never felt that I was punished without cause.

32. I sometimes think when people have a misfortune they only got what they deserved.

33. I have never deliberately said something that hurt someone's feelings.

To what extent do you feel the following actors have responsibility to do something about climate change? ***(None-Complete, 6 steps)***

Politics
Economy
Individuals
Society as a whole
Industrialised countries (e.g. USA, Europe)
Emerging economies (e.g China, Mexico, India)
Developing countries (e.g. Kenya, Nigeria, Bolivia, Haiti)

Please add additional thoughts or opinions on this survey and its questions here, if you have any. ***(Free text box)***

_____

Once again, thank you for your participation.

Appendix 2: Measuring Past Luxury Emissions

The items included in the measurement of past luxury emission relates to the domains of transportation, food, energy and consumption. Below are the justifications for the inclusion of particular items based on the distinction between subsistence- and luxury emissions, the availability of alternatives and the emissions related to the activity.

Items regarding transportation included flying and driving a car instead of using alternative modes of transport despite those being available. Flying (not work related) can hardly be considered fulfilling basic human rights, except for maybe in an emergency situation, and thus qualifies as a luxury emission (Placani & Broadhead, 2022). Driving a car might be necessary to fulfil certain needs (access to food, health care etc), but driving a car when feasible alternative modes of transport with lower emissions, such as walking, biking and public transport, exist, can be considered a luxury emission. Both flying and owning or regularly using a car are some of the most emitting activities one can engage in (Wynes & Nicholas, 2017).

In the domain of energy and housing, participants were asked the source of energy for electricity and heating, as well as house size and the use of a second home. As homes are not necessarily heated with electricity (Naturvårdsverket, n.d.-a), one question concerned the source of energy for heating, and one concerned the energy source for electricity. For heating, renewable energy sources such as green electricity, heat-pumps, biofuel, district heating (often biofuel based) and solar heating are climate friendly options to using natural gas or oil (Swedish Energy Agency, 2022). Thus the latter has been considered luxury emissions in this survey. Similarly, for electricity, options from renewable sources such as wind, hydro, solar and biofuel are widely available, and are not necessarily more expensive than fossil based electricity (ElavtalDirekt, n.d.). Using renewable energy and minimising one's energy consumption are important steps to limit GHG emissions (Naturvårdsverket, n.d.-b).

As house size and having a second home impacts energy consumption, questions regarding those were also included. In Sweden, having a second home (a so-called *sommarstuga* or *fritidshus*) is not uncommon, with a total of 610 000 existing within the country (Statistics Sweden, 2022d).Having a second home can hardly be considered a need, and neither can having a home that is very large. In terms of housing size, the average living area varies depending on region and housing type, with 42 sqm/person being the national average and with 52 sqm/person being the highest country average (home owners in Kronobergs county) in 2021 (Statistics Sweden, 2022a). Based on this, having a living area over 60 sqm/person was considered unnecessary in this study.

In terms of consumption, the items examined whether the participants bought new electronic devices unnecessarily, and the consumption of new clothes instead of second hand. The high energy demand of the manufacturing of electronic devices such as computers and smart-phones, combined with their often short lifespan, makes up a large part of the GHG emissions linked to these devices (Belkhir & Elmeligi, 2018; Dong et al., 2022). Getting a new device while the old is still working is a want rather than a need, and thus it qualifies as a luxury emission. Buying second hand clothes rather than new ones is increasingly common (Hultman, 2023) and is critical in the move towards more sustainable fashion (Centobelli et al., 2022). Thus opting for new when second hand is a feasible alternative is here seen as a source of luxury emissions.

When it comes to food, the items explore to what degree the participants eat plant-based foods, with questions regarding the consumption of meat, dairy and eggs. Animal-based diets have significantly higher GHG emissions than plant-based ones (Scarborough et al., 2014; Seconda et al., 2018) and many researchers argue that transitioning to a plant-based diet or limiting one's meat intake is one of the most important changes an individual can do for the climate (Garnett, 2009; Willett et al., 2019; Wynes & Nicholas, 2017). In 2021, almost 60 % of Swedes ate vegetarian food at least once a week, and almost 9 % were vegan or vegetarian, showing that it is a viable option for many Swedish residents (*Vegobarometern*, 2022).

Appendix 3: Sociodemographic Variables

Table 4: Shows sociodemographic variables such as gender identity, age, education, occupation, income and city size for the sample in this study (N=102) compared to the Swedish population. Different data sources can be found in the right-hand column. *Ages under 19 are not included in the population when calculating the percentages, in order to make a comparison between the sample and the population easier. **Ages within parenthesis is the division used for population data. *** Includes people who live in, near or on the outskirts of a large city. **** The line for what constitutes a village was drawn at 'less than 1000 inhabitants' for the population data.

Socio demographic variable	Percentage of Sample (%)	Percentage of Population (%)	Source of population data
Gender Identity			(Statistics Sweden, 2023c)
Women	60	50	
Men	38	50	
Non-binary	1	-	
Prefer not to say	1	-	
Age (Years)		Year 2022; Ages >19*	(Statistics Sweden, 2023c)
20-30 (20-29)**	50	15	
31-40 (30-39)	17	18	
41-50 (40-49)	11	16	
51-60 (50-59)	6	17	
61-70 (60-69)	14	14	
>70	3	20	
Education		Year 2021	(Statistics Sweden, 2022b)
Primary and lower secondary education, less than 9 years	0	3	
Lower secondary education, 9 years	0	8	
Upper secondary education less than 3 years	0	18	
Upper secondary education 3 years	3	24	
Post-secondary education, less than 3 years	6	16	
Post-secondary education, 3 years or more	69	28	
Post-graduate education	23	1	
Unknown	-	3	
Occupation		Year 2022; Ages 15-74	(Statistics Sweden, 2023a, 2023b)
Student	33	9	
Employed	47	62	
Self-employed	5	7	
Currently unemployed	2	4	
Retired	12	12	
Sick or unable to work	0	4	
None of the above	1	3	
Income (100 000 kr)		Year 2021; Ages 20-64	(Statistics Sweden, 2022c)
<1	25	13	
1-1.9	18	11	
2-2.9	12	14	
3-3.9	12	22	
4-4.9	12	18	
5-5.9	13	10	
6-6.9	4	5	

7-7.9	2	3	
8-8.9	2	1	
9-9.9	0	1	
>10	1	2	
City size		Year 2020	(Statistics Sweden, 2021b, 2021a)
In or near the centre of a large city with more than 100 000 inhabitants	47	33***	
On the outskirts of a large city with more than 100 000 inhabitants	14	-	
In a medium-sized city with about 20 000 to 100 000 inhabitants	26	22	
In a small town with under 20 000 inhabitants	4	27	
In a village or on the countryside	9	18****	