

**The Company, Them and Me: The Effect of Corporate Environmental Responsibility on
Intended Pro-Environmental Behaviour and the Effects of Group and Personal Values**

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Abstract

In recent times, the threat of climate change has become evident. In this light, many organizations have incorporated Corporate Environmental Responsibility (CER) in their strategy. The current paper investigated the effect of CER perceived by customers on their intended pro-environmental behaviour, specifically looking at the mediation effect of group biospheric values and the moderation effect of personal biospheric values. Supporting prior research, the results suggest that perceived CER significantly increases participants' intended pro-environmental behaviour (hypothesis 1). The study also supports the idea that perceived group biospheric values mediate this effect (hypothesis 2), indicating that perceived CER influences behavioural intentions through the perception of other customers' values. Contradicting previous findings, no significant moderating effect of personal biospheric values was observed (hypothesis 3), suggesting that personal values may not be as influential for the impact of CER on behaviour as previously thought. The results further suggest the values of the group have to be considered when studying the effect of CER on pro-environmental behaviour. Implementing the results, it is suggested that environmental policy may emphasize group values in interventions to encourage pro-environmental behaviour. Furthermore, corporate strategists should consider emphasizing the company's CER and customers' biospheric values when marketing the company's sustainable ambitions. This may ensure a stable demand, increase sales and stimulate pro-environmental behaviour in customers.

Keywords: Corporate Environmental Responsibility, pro-environmental behaviour, personal values, group values

The Company, Them and Me: The Effect of Corporate Environmental Responsibility on Intended Pro-Environmental Behaviour and the Effects of Group and Personal Values

In recent times, the environmental threat of climate change has become painfully clear. To prevent climate change from getting worse, drastic adaptation and mitigation measures must be applied, both by companies and the general public (IPCC, 2022). Recently, a substantial number of companies have incorporated a Corporate Environmental Responsibility (CER) pledge to limit or decrease their pollution of the environment and to produce and act more sustainably in the future (Flammer, 2013; Tebini et al., 2015). Additionally, behavioural change for the general public is also of great importance (Steg & Vlek, 2009). It will take substantial behaviour adaptations to prevent the global temperature from rising 2°C (IPCC, 2022). People will have to support low-carbon policies and act more sustainably, for example by consuming sustainable products (Steg, 2023). Generally speaking, people have to adopt pro-environmental behaviour, which is defined as all actions that either benefit the environment or opt to impact the environment as little as possible (Steg & Vlek, 2009). Previous research suggests the CER of a company may encourage people to act more pro-environmentally (Ruepert et al., 2017; Sharpe et al., 2022; Van der Werff et al., 2021).

There is ample evidence for a relationship between a company's CER and the intended pro-environmental behaviour of customers (Van der Werff et al., 2021). It is argued that being part of the company lets customers internalize the company's sustainable goals, consequently increasing their pro-environmental behaviour. However, to what extent this is influenced by the values of social groups and personal biospheric values is still unclear. The current research focuses on how the perceived CER of a company impacts the customers' intended pro-environmental behaviour, particularly focusing on the mediating effect of customer group values and the moderating effect of personal biospheric values.

CER and Pro-Environmental Behaviour

Corporate Environmental Responsibility (CER) is broadly defined as “any goals or policies voluntarily adopted by an organization that explicitly aim to reduce their negative impact on the environment” (Sharpe et al., 2022, p. 1). For the current paper, we specifically look at CER as perceived by the customers, since this will likely be more influential in behavioural change than objective measures of CER (De Vries et al., 2015; Ruepert et al., 2017).

Recent research suggests that pro-environmental behaviour may be influenced by perceived CER (Ruepert et al., 2017; Sharpe et al., 2022; Van der Werff et al., 2021). It is argued that when employees perceive their company to endorse CER, it will positively affect their pro-environmental behaviour at work, like switching off lights when leaving a room and using reusable packaging (Sharpe et al., 2022). Sharpe and colleagues (2022) suggest this behavioural change is internally motivated, instead of externally: employees adopt the organisation's goals because they feel part of the organization and consequently internalize the pro-environmental goals (Sharpe et al., 2022). This is interesting because it implies that employees are not motivated by the rewards or sanctions of their behaviour. This idea is further supported by the findings of Van der Werff and colleagues (2021). They stated that not only employees' but also customers' pro-environmental behaviours are positively influenced by a company's perceived CER. Contrary to employees, customers are generally not rewarded or sanctioned for their behaviour. The presence of a positive relationship between perceived CER and pro-environmental behaviour, as well as the absence of possible rewards or sanctions for customers, suggests that perceived CER may influence people in their pro-environmental behaviour in more subtle ways than rewarding and punishing.

Group Biospheric Values

It has been reasoned that the effect of perceived CER on pro-environmental behaviour is mediated by one's self-identity (Van der Werff et al., 2021). Implementing the Social

Identity Theory (Tajfel & Turner, 1979), they suggest employees and customers may generally see themselves as part of the company. Because they feel part of the company, they may shape their self-identity in line with the company's biospheric values, displayed by their CER. Here, values are broadly defined as guiding principles for a person (or company), transcending everyday events and embodying general goals (Schwartz, 1992; Steg, 2023). Biospheric values, defined as the appreciation and protection of nature and the environment, are influential within the context of pro-environmental behaviour (Bouman et al., 2020a; De Groot & Steg, 2007). Group biospheric values, then, represent to what extent one perceives a group to endorse biospheric values. As customers shape their self-identity according to the company's biospheric values, they will see themselves as more pro-environmental and therefore act more pro-environmentally (Van der Werff et al., 2021). In their study, they controlled for the selection effect of customers choosing companies already high in pro-environmental values, further supporting a possible causal effect of perceived CER on customers' pro-environmental behaviour.

However, Van der Werff and colleagues (2021) do not explicitly mention the mechanism through which the customers see themselves as part of the company. It is merely assumed that they do, based on Social Identity Theory. Taking into account the social aspect of Social Identity Theory, it may be possible that the customers feel part of the company, because they largely feel part of the group of customers that shop at the company: indeed, past research argues that identification with the organization is at least partially caused by the interaction with other customers (Prentice et al., 2019). Given the apparent salience of other customers, perhaps not only the perceived company's values, displayed by their CER, are important for influencing intended pro-environmental behaviour, but also the perceived values of the customer group.

Indeed, research suggests that perceived group biospheric values can influence pro-environmental behaviour (Bouman et al., 2020b). The research concluded that the effect of perceived group biospheric values on pro-environmental behaviour is strongest for those who strongly identify with the group. Implementing this knowledge to a company's circumstances, as the customer feels part of the company's customer group, they may be influenced by the other customers when they think they value the environment. This may mean that the effect of perceived CER on pro-environmental behaviour is mediated by the perception of other customers' biospheric values.

Finally, for this proposed mediation it would be necessary that people perceive CER companies to have customer groups that especially value the environment: otherwise, the perception of the customer group would not differ from a regular (non-CER) company's customer group. Research suggests that people that value the environment, often act pro-environmental (Ferraz et al., 2017) and buy pro-environmental products at CER companies (Nguyen et al., 2016). It is also stated that employees' behaviour is influenced by a company's values (Killingsworth, 2012), suggesting a causal relationship. These results may imply that CER companies generally have customer groups high in biospheric values. However, people's perception of CER company's customer groups has to my knowledge not been investigated. Although data should be conclusive, it nevertheless makes sense that when CER companies have customer groups high in biospheric values, people generally also perceive it as such.

Personal Biospheric Values

Studies have shown that personal biospheric values have a positive relationship with a wide range of pro-environmental behaviours: those who are high in biospheric values, often act sustainably; they may for example use less energy and recycle more (Bouman et al., 2020a; De Groot & Steg, 2007; Ruepert, 2017). However, research on the effect of perceived

CER on pro-environmental behaviour shows that employees high in biospheric values are not affected by perceived CER, while employees with moderate to low biospheric values are (Ruepert et al., 2017). This is interesting because personal biospheric values may apparently act as a moderator for perceived CER on pro-environmental behaviour. Those high in personal biospheric values will act pro-environmental regardless of CER, while those moderate to low in biospheric values will have their attention shifted to pro-environmental behaviour, resulting in more pro-environmental behaviour (Ruepert et al., 2017).

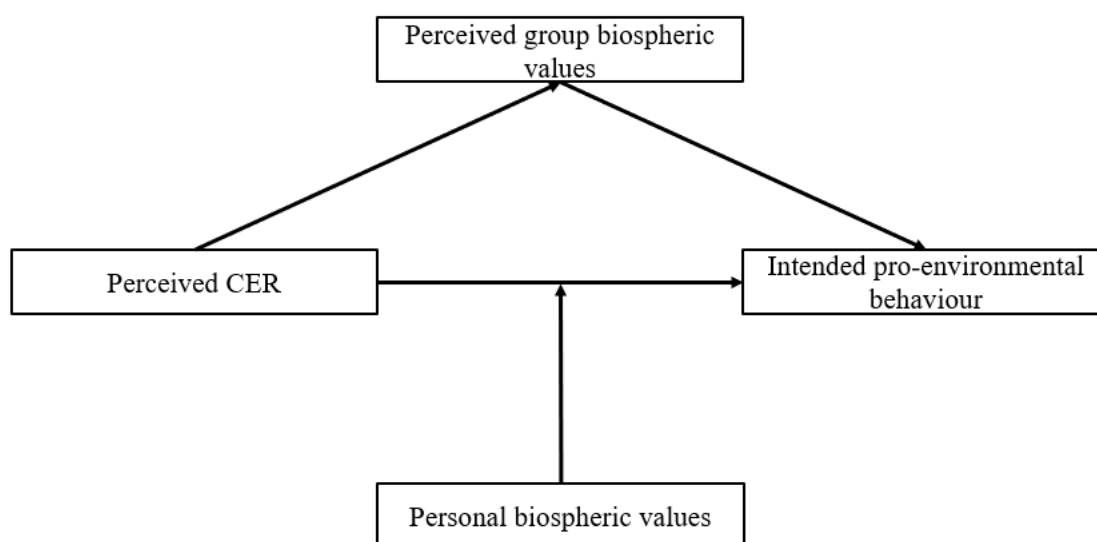
It is possible that perceived CER does not affect people high in personal biospheric values, because they are already acting in line with the group biospheric values. This incorporates the idea that the effect of group biospheric values is strongest for those with low to moderate personal biospheric values (Bouman et al., 2020b). Hence, those moderate to low in personal biospheric values, who are not yet acting in line, might be influenced by their group membership to do so. In this line of reasoning, the mediating effect of perceived group values may be moderated by one's personal biospheric values.

Present Research

Based on previous research, the positive effect of perceived CER on pro-environmental behaviour may be influenced by both group and personal biospheric values through different mechanisms. By studying both individual and group levels of values, the present paper can better understand the impact of the perceived CER on the intended pro-environmental behaviour of the customers. This research particularly focuses on the mediating effect of perceived group biospheric values of the group of customers and the moderating effect of personal biospheric values. A clothing company was used for the conceptualization of a company, since it is (a) a general category of stores, that is (b) familiar to most people and (c) relevant in the context of CER, as the fashion industry is an influential factor in environmental pollution (Niinimäki et al., 2020)

For the main effect, it is expected that perceived CER has a positive effect on the intended pro-environmental behaviour of customers: customers who perceive the company as high in CER will intend to act pro-environmental in the future more than those who perceive the company as low in CER (hypothesis 1). Furthermore, the effect of perceived CER on pro-environmental behaviour will be mediated by perceived group biospheric values: people may perceive the customer group of CER companies to be higher in biospheric values and may want to act more pro-environmental after shopping at a CER company because they are influenced by the perception of other customers' values. The effect of perceived CER on pro-environmental behaviour will also be the largest for people with low to moderate personal biospheric values (hypothesis 3a). There will not be an increase in the effect for those with high personal biospheric values (hypothesis 3b), since they are already acting in line with the group values and do therefore not feel the necessity to change behaviour to adhere to group values. The conceptual model is illustrated in Figure 1 below.

Figure 1: conceptual model



Method

Participants

In total, 144 participations were noted. We excluded 15 participations from the data analysis because they did not finish the survey. In addition, three participations were removed as outliers (z -score > 3 for the duration of time they needed to fill out the survey). We then removed 18 participations because they did not thoroughly read the manipulation, as we assumed participants need at least 15 seconds to finish the text. Thus, the final sample used in the data analysis consisted of 108 participants, of which 40.7 % were male and 59.3 % were female. No participant indicated a different gender than male or female. The average age across the sample was 41.12 ($SD = 18.72$, $min = 16$, $max = 90$). Concerning nationality, 50.9% of the participants were Dutch, 31.5 % of the participants were German, and 17.6 % of the participants had another nationality. Thus, over 80 % of the participants stemmed from a WEIRD (Western, Educated, Industrialized, Rich and Developed) country.

Design and Procedure

In the present research, I used an experimental set-up: CER was the independent variable (control vs. experimental) and was randomly assigned to half of the participants. Personal biospheric values (relatively low vs. relatively high) was the moderating variable and perceived group biospheric values (relatively low vs. relatively high) was the mediating variable. Both variables were not manipulated, but computed based on average score: below average (low) and above average (high). Intended pro-environmental behaviour was the dependent variable, measuring a change in intention through measuring both a pre- and post-level of intended pro-environmental behaviour.

Participants were collected via a convenience sample. Acquaintances of the researchers were asked personally and could choose to participate voluntarily. No financial compensation or any other kind of rewards were offered after participation. As a condition of participation, the participants had to be older than 16 years and understand one of the three languages (English, Dutch, or German) in which the survey was offered. The data collection

was part of writing our bachelor theses within the project “Promoting sustainable behaviour and policy support in net-zero transition” at the University of Groningen, Netherlands. This study is registered to the Ethics Committee of the Faculty of Behavioural and Social Sciences at the University of Groningen, The Netherlands, and is exempt from review. We collected the data between the 27th of April 2023 and the 3rd of May 2023. Before collecting the data, I practised a power analysis for my research model, aiming for medium effect size ($f^2 = 0.0625$), with $\alpha = .05$, and $power = .80$, while testing two independent, and one dependent variable. This analysis resulted in a recommended sample size of $N = 128$. The survey was accomplished in one session and there was no time restriction for taking the survey. For the participants included in my analysis, the average time needed to finish the survey was 30.73 minutes ($SD = 95.02$, $min = 4.50$, $max = 730.25$).

First, the participants received general information about the survey, including the study’s relevance and goal, a summary of what will be asked of them, and the fact that participation is voluntary. In addition, the participants were informed about how we will utilize their responses for our research topics and how their data will be treated. Then the participants had to give consent to take part in the study, to continue the survey. In the main part of the survey, the participants answered questions about seven different blocks: personal values, sustainable clothing, sustainable diet, sustainable consumption, corporate environmental responsibility, carbon offsets, and environmental policies. The researchers were not present when participants filled in the survey, which was taken individually.

Materials

The entire questionnaire had 32 items, of which nine were specifically for the current research. The questionnaire contained exclusively closed questions, assessed online via Qualtrics (www.qualtrics.com). The questionnaire was created in English and translated into Dutch and German. A complete version of the survey can be found in Appendix A. Data

analysis was performed via SPSS Version 27 and power analysis was performed with Gpower 3.1 (Faul et al., 2009).

Manipulation of CER

For the manipulation of CER, two texts were created with the artificial intelligence application ChatGPT (OpenAI, 2023) and then edited by the researcher. Prompted with the commands ‘write a 150-word text about a clothing company. It has to describe the experience of shopping there’ and ‘now write the same text, but mention the company’s environmental responsibility’, the software computed two texts. After checking for quality, shortening and adjusting elements by the researcher, both texts described a fictional clothing company X and participants had to visualize themselves shopping in the store. This way, the manipulation is similar to the manipulation used by Ruepert and colleagues (2017), although adapted to the context of a clothing company. The control condition ($N = 57$) described a neutral clothing company, meaning that there were no mentions of sustainable or pro-environmental aspects. The experimental condition ($N = 51$) described a clothing company that had sustainable clothing and a sustainable customer group. In the experimental text, five CER-related descriptions were included, concerning mentions of the company’s commitment to sustainability, the sustainable fabrics used and the customers’ care for the environment. In the control text, these were substituted for descriptions concerning quality and fashion. Both texts can be found in Appendix A.

Manipulation Check

To check whether the manipulation worked, participants were asked to indicate how much they agreed with the statement ‘After reading the text, I can see myself shopping at Clothing Store X’ on a 7-point Likert scale (1 = *strongly disagree*, 7 = *strongly agree*) to assess participants’ ability to envision themselves shopping in the store. To assess whether the CER aspect of the manipulation was salient, participants also had to indicate on the same

Likert scale how much they agreed with the statement ‘Clothing Store X finds taking care of the environment important and strives to minimize its negative impact on the environment’, a question used in the research of Ruepert and colleagues (2017), although adapted to the current research topic.

Personal Biospheric Values

For the assessment of the relative biospheric values of participants, I used a modified version of the Environmental Portrait Value Questionnaire (E-PVQ; Bouman et al., 2018) containing only four items assessing biospheric values (Cronbach’s $\alpha = .83$). The items present that ‘this person’ finds environmental aspects important (i.e., preventing pollution, protecting the environment, being in unity with nature and respecting nature). The participant then had to indicate to what extent they identify with the person on a 7-point Likert scale (1 = *totally not like me*, 7 = *totally like me*). Items were gender-matched, so that those who indicated ‘man’ read statements with he/him pronouns and those who indicated ‘woman’ read statements with she/her pronouns. Those who indicated ‘non-binary/third gender’ or ‘prefer not to say’ read statements with the gender-neutral pronouns they/them. To summarize personal biospheric values, the mean response to the four questions was computed for each participant. The average of this mean score on personal biospheric values was 5.51 ($SD = 0.98$). For further analysis, participants were grouped based on whether the mean of their answers was below the group averages (low personal values, $N = 59$) or above (high personal values, $N = 49$) the mean of all answers.

Using the adjusted E-PVQ has three benefits for the current research: firstly, the E-PVQ, compared to the often-used Environmental Schwartz Value Survey (E-SVS) (Steg et al., 2014), is found to be easier to process, while yielding similar results (Bouman et al., 2018). As the entire questionnaire of all questions was rather intensive, easier-to-process items were preferred to ensure a good quality of responses. Secondly, as the items in the E-PVQ present

statements of other people, they may be more robust against self-enhancement bias (Schwartz, 2003). This means participants were less likely to answer in ways that improve their self-image, giving more objective answers instead. This further ensured data quality. Third, the adjusted E-PVQ was shorter than the entire E-PVQ, which benefitted the overall survey length. This ensured the participants could maintain focus. However, using the shortened version, it was not possible to compare the relative importance of values within a person, since other values were not assessed.

Perceived Group Biospheric Values

Participants were asked to indicate how much they thought other customers of the clothing store valued the environment on a 7-point Likert scale (1 = *strongly disagree*, 7 = *strongly agree*) ($M = 4.57$, $SD = 1.26$). Participants were then grouped based on whether their answer was below (low group values, $N = 55$) or above (high group values, $N = 53$) the mean.

Intended Consumption Behaviour

To assess intended consumption behaviour, the dependent variable, participants had to indicate how much they agreed with the statement '*In the near future, I want to buy and consume more environmentally friendly*' on a slider ranging from 1 to 100, with a higher score meaning a stronger agreement ($M = 77.92$, $SD = 17.26$). The item was assessed twice: once before the manipulation of CER and once after. This enabled a measure of change and allowed for controlling of a priori intended pro-environmental behaviour. The second assessment enticed a slight rephrasing: '*after this shopping experience, I will buy and consume more environmentally friendly in the near future*' ($M = 60.39$, $SD = 19.59$). This rephrasing included a mention of the read text, to make the manipulation more salient. The change statistic was computed by subtracting the first measure from the second measure ($M = -17.53$, $SD = 20.97$).

The assessment of intended consumption behaviour is superior compared to the assessment of perceived current behaviour because it avoids the possibility of measuring an intention-behaviour gap (Carrington et al., 2010; Grimmer & Miles, 2016), which was not the scope of the current research. Furthermore, the different phrasing and the sliders counter the possible intention of participants to answer exactly the same on both items, because the items are not exactly similar and answering the same on a slider is more effortful than on, for example, a Likert scale. This enables better differentiation and detection of change in intended pro-environmental behaviour.

Results

The present research aimed to test the effect of perceived CER on intended pro-environmental behaviour (hypothesis 1) and to explore the mediating effect of perceived group biospheric values (hypothesis 2) as well as the moderating effect of personal biospheric values (hypothesis 3). The used manipulation was validated by the incorporated manipulation checks. For testing of hypotheses, both multiple linear regression (hypothesis 1 and 3) and mediation analysis with an additional Sobel Test (1982) (hypothesis 2) were performed. Assumptions for both tests were checked and validated (see Appendix B for a summary of plots).

Manipulation checks

By asking whether people were able to envision themselves shopping at the described company X, I assessed the quality of the manipulation. Participants' mean answer was 5.44 ($SD = 1.14$), indicating that the mean answer lay between 'somewhat agree' and 'agree'. This indicates that most participants were able to envision themselves shopping in the store, making it a successful manipulation. Using an ANOVA, it was also assessed whether the manipulation of CER yielded a different perception of the company's CER. The mean of perceived CER was significantly higher for participants in the experimental condition ($M =$

5.78, $SD = .92$) than in the control condition ($M = 3.98$, $SD = 1.32$), $F(1,106) = 66.35$, $p < .001$), meaning the manipulation worked and was of good quality.

Despite the validation of our manipulation checks, the change in intended pro-environmental behaviour (dependent variable) appeared negative: after manipulation, participants indicated less intention to act pro-environmental in the future in general ($M = 60.39$, $SD = 19.59$) than before the manipulation ($M = 77.92$, $SD = 17.26$), contradicting previous results (Ruepert et al., 2017; Sharpe et al., 2022; Van der Werff et al., 2021). Explanations and implications are discussed in the discussion section. For the statistical analyses, differences between groups can still be found, as the experimental group was less negatively impacted to act pro-environmentally than the control group. Hence, analysis is still meaningful.

General Analysis

The CER condition was expected to result in higher intended pro-environmental behaviour than the control condition (hypothesis 1). Analysing the data by using multiple linear regression, there appears to be a significant difference in intended pro-environmental behaviour for the two groups ($F(1,107) = 4.49$, $p = .036$); the experimental condition ($M = -13.08$, $SD = 19.00$) rated their intended pro-environmental behaviour higher than did the control condition ($M = -21.51$, $SD = 22.00$), supporting hypothesis 1. Note here that both means are negative. Since the CER condition was higher than the control condition, it means that those who envision themselves shopping at a CER company are *less likely to decrease* their intention to act pro-environmentally in the future than those who shopped at a non-CER company.

Furthermore, it was hypothesized that the effect of perceived CER on intended pro-environmental behaviour was mediated by perceived group biospheric values (hypothesis 2). Checking intervariable correlations (Table 1) showed that intention in pro-environmental

Table 1*Correlations for Study Variables*

| Variable | <i>N</i> | 1 | 2 | 3 | 4 |
|--|----------|-------|-------|-----|---|
| 1. Change in intention | 108 | — | | | |
| 2. CER ^a | 108 | .20** | — | | |
| 3. Perceived group values ^b | 108 | .33** | .44** | — | |
| 4. Personal values ^c | 108 | -.09 | .11 | .04 | — |

^a 0 = control condition and 1 = experimental condition. ^b 0 = low perceived group values and 1 = high perceived group values. ^c 0 = low personal values and 1 = high personal values.

* $p < .05$. ** $p < .01$.

behaviour was positively related to both perceived CER and group values. A complete mediation would occur when (a) perceived CER would significantly predict change in intended pro-environmental behaviour, (b) perceived CER would significantly predict perceived group biospheric values, (c) perceived group biospheric values would significantly predict change in intended pro-environmental behaviour and (d) the effect of (a) is significantly reduced upon adding perceived group biospheric values to the model (Baron & Kenny, 1986). The data suggest all conditions are met: the effect of perceived CER on intended pro-environmental behaviour is significant ($b = 8.43$, 95% CI [0.54, 16.32], $p = .036$), as is the effect on perceived group biospheric values ($b = 0.45$, 95% CI [0.27, 0.62], $p < .001$) and the effect of perceived group biospheric values on intended pro-environmental behaviour ($b = 13.97$, 95% CI [6.39, 21.54], $p < .001$). Furthermore, the effect of perceived CER changed to nonsignificant upon adding perceived group biospheric values ($b = 2.76$,

95% CI [-5.73, 11.26], $p = .520$). A Sobel test of mediation further confirmed these results ($p = .010$) (StarCresto, 2021), supporting hypothesis 2.

It was also expected that the effect of perceived CER on intended pro-environmental behaviour was moderated by personal biospheric values (hypothesis 3): for participants low in personal biospheric values the effect of perceived CER on intended pro-environmental behaviour would be stronger (hypothesis 3a) and for participants high in personal biospheric values there would be no effect (hypothesis 3b). Adding personal biospheric values to the multiple linear regression model used for hypothesis 1 resulted in a non-significant result ($F(2, 107) = 2.953, p = .057$): personal biospheric values did not influence the effect of perceived CER on intended pro-environmental behaviour. Upon adding an interaction term to the model, all variables became nonsignificant, possibly due to decreased power. Therefore, both hypotheses 3a and 3b are not supported, since both conditions should have distinctive patterns.

Discussion

The present study investigated the effect of perceived CER on intended pro-environmental behaviour and respectively mediating and moderating effects of perceived group and personal biospheric values. In line with previous findings (Ruepert et al., 2017; Sharpe et al., 2022), perceived CER significantly increased participants' intended pro-environmental behaviour (hypothesis 1). Additionally, the research supports the idea that perceived group biospheric values mediate this effect (hypothesis 2). No significant effect was found for a moderation of personal biospheric values (hypothesis 3), contradicting previous findings on the topic (Bouman et al., 2020a; Ruepert et al., 2017).

Theoretical Implications

The present research has distinct theoretical implications. Firstly, the significant effect found for hypothesis 1 further confirms the relationship between perceived CER and pro-

environmental behaviour as suggested in earlier studies (Ruepert et al., 2017; Sharpe et al., 2022): the findings both reproduced and extended the effect, by showing the effect is also present in customers and not only in employees. This finding further supports the idea that people are internally motivated by CER to act more pro-environmental, as there are no direct rewards or punishments for customers to act pro-environmental.

Secondly, the present paper adds that perceived group biospheric values mediate the relationship between perceived CER and intended pro-environmental behaviour: perceived CER may make customers more aware of the biospheric values of other customers, which in turn causes people to (want to) act more pro-environmentally. Therefore, the internal motivation found for hypothesis 1 may be caused by the perception of the biospheric values of the group. The apparent importance of group biospheric values additionally supports the idea that perceived group values are an influential factor in personal pro-environmental behaviour (Bouman et al., 2020a, 2020b). Indeed, this notion is in line with previous research, suggesting that the organization's values may affect behaviour (Killingsworth, 2012).

Additionally, the results support the notion of Van der Werff and colleagues (2021) that customers may feel part of the company, to which it adds that customers may feel part of the company because they feel part of the group of customers. This nuance complements the mechanism theorized by Van der Werff and colleagues (2021), further supporting the idea that Social Identity Theory (Tajfel & Turner, 1979) is a key mechanism in the main effect of perceived CER on pro-environmental behaviour: perceived CER may shape their identity based on the perceived values of the group of customers they belong to, instead of generally 'feeling part of the company'.

Third, the findings on personal biospheric values conflict with previous findings (Bouman et al., 2020; Ruepert et al., 2017), by suggesting there is no moderating effect on the effect of perceived CER on intended pro-environmental behaviour. This conflicts with the

understanding of values, as proposed by Schwartz (1992) since the current data suggest personal biospheric values were not influential enough to guide intention. It may be that the influence of personal values is not as extensive as earlier thought, but the findings could also direct to methodological flaws in the current research.

The findings also partially conflict with part of the incorporation of Social Identity Theory (Tajfel & Turner, 1979) as an explanation of the effect of CER on pro-environmental behaviour: if the notion of Social Identity Theory in this mechanism is correct, it would ultimately mean that those who are not already acting in line with the group (those low in personal biospheric values) are most motivated to change, since they do want to act in line with the group. However, such a pattern is not distinguished, since no moderation is found: the influence of the group values on the intended behaviour is the same for both high and low levels of biospheric values, suggesting the group's values influence the individual regardless of what they are already thought to be important.

Finally, as the current paper did find results for the effect of group values, yet not for personal values, it may mean that in the realm of pro-environmental behaviour, the groups' values overrule what one personally values. Indeed, recent research suggests that in the context of pro-environmental behaviour, others' values are salient and influential (Bouman et al., 2020b; Wang et al., 2021). Ultimately, the results may suggest that in situations where collective interests are increasingly at play (like pro-environmental behaviour), people take into account others more than themselves.

Practical Implication

The current findings have important implications for both environmental policy and corporate strategy of CER companies. Firstly, since the data suggest perceived group values overrule personal biospheric values, incorporating mentions of group values in interventions aiming to increase pro-environmental behaviour may turn out very effective. As policies are

often based on personal values (Steg, 2023), this novel change in focus could further improve the effectiveness of such interventions.

Additionally, as the results underscore the importance of customer groups for individual customers, future corporate strategists may opt to emphasize the values of their customer group as well as the company's values in their marketing of sustainability. This may ensure both stable market demand and increased sales: when characteristics of both the company and the customer group are more defined, individual customers may identify and connect more with the company (Cornelissen et al., 2007; Prentice et al., 2019). The higher engagement may lead to a solidified connection, ensuring a more stable market demand and ultimately, more financial profit (Prentice et al., 2019). Additionally, the positive effect of perceived CER on individual intended pro-environmental behaviour in customers may cause a virtuous circle: when customers want to act more pro-environmentally after shopping at the CER company, they will be (moderately) more likely to consume pro-environmentally (Bamberg & Möser, 2007). This may increase the sales of sustainable products of the company, increasing profit and financial stability. Therefore, the increased emphasis on CER and group biospheric values may result in better financial performance of CER companies. This may enable CER companies to continue and possibly increase their sustainable practices, ultimately bettering the environment.

Limitations and Future Directions

The current study was limited in four aspects. Firstly, since the assessment of personal biospheric values was less extensive than in earlier research, it is possible the current paper did not find an effect because of a lack of nuance in the measure of personal biospheric values. As behaviour is ultimately determined by the relative importance of certain values within a person (De Groot & Steg, 2007), incorporating this relativity may give more informative results. Earlier research indeed suggests that accounting for different levels of

different values creates a clearer image (Steg et al., 2014). Future research may opt to replicate the current study, adding the entire E-PVQ survey (Bouman et al., 2018).

Incorporating the distinction between biospheric values and altruistic values may reveal a significant difference since both are self-transcending values (and therefore overlapping), but distinct in their motivation (De Groot & Steg, 2007). Those high in biospheric values value the environment, while those high in altruistic values value others' well-being (Bouman et al., 2018). It is therefore expected that in a future replication, those high in altruistic values are more influenced when other customers are mentioned, while those high in biospheric values will act pro-environmentally regardless of other customers: they are more fundamentally motivated to care for the environment (Bouman et al., 2018)

The second limitation was the decrease in intended pro-environmental behaviour after manipulation: although differences were distinguishable between the control and experimental group, the results suggest participants were overall less eager to act pro-environmentally after shopping at either company. On the first measure, the control and experimental group scored similarly on intention (respectively $M = 77.82$, $SD = 17.35$ and $M = 78.02$, $SD = 17.33$). However, on the second measure both decreased, although the control condition ($M = 56.32$, $SD = 19.78$) decreased more than the experimental ($M = 64.94$, $SD = 18.52$). These results conflict with previous research (Ruepert et al., 2017), in which a similar manipulation did increase pro-environmental intentions. A possible explanation for the decrease in intention of the control group could be that, as they visualized themselves shopping in a non-CER store, they might have adjusted their perception of their pro-environmental behaviour downwards: since participants generally viewed themselves as intending to act pro-environmentally (as mean intention was 77.92), being confronted with visualizing oneself as not acting pro-environmental could decrease the perception of their intended pro-environmental behaviour. This would explain the lower score on the second measure of intended pro-environmental

behaviour for the control group. However, this would not be a satisfactory explanation for the experimental group, as their second measure was also lower than the first. In this light, it may be possible that the question phrasing caused the decrease; the second question started with ‘after this shopping experience’, which may have made the manipulation text more salient, causing participants to evaluate their answers more critically, or wilfully answer more disagreeing than normally. Alternatively, participants may have thought the text was not very impressive or of good quality, rejecting the effect it had on them. This may have caused them to indicate a lower score on the intention question, because they are intending to act pro-environmental, but not necessarily *because* of the text. Future research may opt to assess intention less salient, leaving out the mention of the read text.

Third, both the dependent variable and the manipulations required imagination or thinking about intentions, instead of real-world activities. This may bring about results different from when assessed more tangibly. To further explore any possible differences, future research may conceptualize the present paper’s variables in a physical store, doing a similar experiment. This may be done by measuring customers’ intended pro-environmental behaviour with differing levels of CER, as well as differing levels of customer group biospheric values (while controlling for a priori pro-environmental behaviour to avoid selection effects). Quite possibly, the most interesting effects may be found among customers who are low (high) in pro-environmental behaviour, shopping at a CER (non-CER) store, since there they are confronted with a customer group having values different from their own. This may highlight if and to what extent the customer adjusts their intention, when presented with differing levels of biospheric values of other customers. Additionally, one could vary the salience of the customer group, for example by having other customers present or only displayed on advertisements, to further explore to what extent the presence of others

influences intended pro-environmental behaviour. Finally, future research could also differ the industry, to see whether the same effects are also present in different branches.

A final limitation was that the current research ($N = 108$) did not meet its required sample size ($N = 128$) to ensure a power of .80, due to the exclusion of participants who did not read the manipulation. Therefore, the interpretation of results should be with caution, as error may play a disproportionate role in the observations.

Conclusion

Although research on the effect of CER on pro-environmental behaviour is flourishing, little is known about the exact mechanisms through which values play a role. The present paper examined the effect of both personal biospheric values and perceived group biospheric values. The results support the idea that CER enhances intended pro-environmental behaviour, through the perception of higher biospheric values of the group of customers. No results were found that suggest the effect of CER on intended pro-environmental behaviour depended on personal biospheric values, as there did not seem to be a significant difference. This supports the theorized importance of perceived group values in behavioural intentions (Bouman et al., 2020a), but contests earlier research on the importance of personal biospheric values (Van der Werff et al., 2021). Environmental policy may therefore focus more on the influence of the group's values to stimulate pro-environmental behaviour. Additionally, future corporate strategy may opt to emphasize the customer group's values and the company's CER in marketing, as this could enhance stable product demand and increase sales, ultimately increasing sustainable practices.

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Appendix A

Survey

Information and Consent

INFORMATION ABOUT THE RESEARCH

“Promoting sustainable behaviour and policy support in net-zero transition”
PSY-2223-S-0346

Why do I receive this information?

You are invited to participate in this research on sustainable behaviour. We provide you with this information to inform you about the extent, purpose, and content of this survey. Based on this, you can decide whether you would like to participate in the survey, or not. This research is conducted as part of the Bachelor thesis of Roeli Huisma, Iris Groot, Jorrit van der Wal, Antonia Karp and Vincent Haller under supervision of Chieh-Yu Lee of the Faculty of Behavioural and Social Sciences at the University of Groningen. On the basis of a checklist developed by the EC-BSS at the University of Groningen, the study was exempt from full ethical review.

Do I have to participate in this research?

Participation in the research is voluntary. However, your consent is needed. Therefore, please read this information carefully. Ask all the questions you might have, for example, when you do not understand something. Only afterwards you will decide if you want to participate. If you decide not to participate, you do not need to explain why, and there will be no negative consequences for you. You have this right at all times, including after you have consented to participate in the research.

Why this research?

To reduce the global temperature increase and accelerate towards a sustainable future, multiple systems must be changed. These transitions will imply lifestyle changes for individuals and strongly depend on people's support and behaviour change. In the current research, we want to know what motivates people to adopt sustainable behavior and support climate change policies.

What do we ask of you during the research?

Firstly, you are asked for your consent to participate in this research. After your consent, you will be redirected to the questions of the survey. In the survey, we will ask about your demographic characteristics, for example, age, gender, and nationality. We then ask you a series of questions about your perception and opinions regarding a few sustainable behaviours, including diets, clothing, flying and policy support. In the survey, you will read a small text about one of the two scenarios describing the shop where you are going to buy your clothes and answer a few questions afterwards. In the final section, you will also read another small text about one of the two policies describing how to allocate the climate costs and then we will ask your opinions about it. There is no right or wrong answer for each question. Please provide the answers that fit your opinion best.

The survey takes approximately 5-10 minutes to complete. No monetary compensation is provided for filling out the survey. If you are recruited from the SONA-system, you will be granted credits based on the criteria set by SONA-system.

What are the consequences of participation?

We expect no negative consequences occurred during the participation. However, if you experience any discomfort or negative effects, you can always stop participating by closing the browser. You can also reach out to one of the researchers by email.

How will we treat your data?

Your data will only be used for educational purposes in writing five Bachelor theses and will not be published. Data will be digitally processed and analysed by the research team. They will process and analyse your data confidentially on a computer or laptop with password protection. All data is collected anonymously. This data will be used until the first of August 2023 and archived for 10 years in the university server according to the protocol of Faculty of Behavioural and Social Science at the University of Groningen. If you are recruited from the SONA-system, your SONA-ID will be separated from the research data for assigning the course credit and will be deleted soon after the credit has been given, approximately around 1-2 weeks after the data collection. The research team will make sure that the research data cannot be traced back to individual students.

What else do you need to know?

You may always ask questions about the research: now, during the research, and after the end of the research. You can do so by emailing one of the researchers involved:

Roeli Huisma: r.huisma@student.rug.nl

Vincent Haller: v.m.haller@student.rug.nl

Jorrit van der Wal: j.r.van.der.wal.1@student.rug.nl

Iris Groot: i.g.groot@student.rug.nl

Antonia Karp: a.karp@student.rug.nl

Or the supervisor Chieh-yu Lee: c.y.lee@rug.nl

Do you have questions/concerns about your rights as a research participant or about the conduct of the research? You may also contact the Ethics Committee of the Faculty of Behavioural and Social Sciences of the University of Groningen: ec-bss@rug.nl.

As a research participant, you have the right to a copy of this research information.

Informed Consent

- I have read the information about the research. I have had enough opportunities to ask questions about it.
- I understand what the research is about, what is being asked of me, which consequences participation can have, how my data will be handled, and what my rights as a participant are.
- I understand that participation in the research is voluntary. I myself choose to participate. I can stop participating at any moment. If I stop, I do not need to explain why. Stopping will have no negative consequences for me.
- Below I indicate what I am consenting to.

Consent to participate in the research:

- Yes, I consent to participate
- No, I do not consent to participate

Demographics

Thank you for consenting to participate.

This survey will be divided into six sections. In this first section, we would like to ask your demographics.

Which gender do you identify with?

- Man
- Woman
- Non binary/others
- Prefer not to say

How old are you?

slider from 16-100

What is your nationality?

- Dutch
- German
- Other (fill in)

Values

Below you will find brief descriptions of different people. For each person, we describe what is very important to them. Please read each description carefully and indicate **how much this person is like you**.

The meaning of the scores is as follows: 1 means that the person is totally not like you, 7 means that the person is totally like you. The higher the score, the more the person is like you.

NB: items were gender matched. For the sake of brevity, only the version for those identifying as man is presented. For those identifying as woman, pronouns she/her were used. For those indicating 'non binary/other' or 'prefer not to say' the pronouns they/them were used.

- It is important to him to prevent environmental pollution (7 point Likert scale, 1 = *totally not like me*, 7 = *totally like me*)
- It is important to him to protect the environment (7 point Likert scale, 1 = *totally not like me*, 7 = *totally like me*)
- It is important to him to respect nature (7 point Likert scale, 1 = *totally not like me*, 7 = *totally like me*)
- It is important to him to be in unity with nature (7 point Likert scale, 1 = *totally not like me*, 7 = *totally like me*)

Sustainable Clothing

In this second section, we are interested in what you think about buying second-hand clothing.

- How much do you feel personally obligated to buy second-hand clothing? (6 point Likert scale, 1 = *not obligated at all*, 6 = *strongly obligated*)
- How much do you feel that people close to you (e.g. family, friends) think it is important to buy second-hand clothing? (6 point Likert scale, 1 = *not obligated at all*, 6 = *strongly obligated*)
- How often do you buy second-hand clothing? (6 point Likert scale, 1 = *not obligated at all*, 6 = *strongly obligated*)

Sustainable Diet

In the third section, we would like to ask you some questions about your diet.

What is a sustainable diet?

Sustainable diet means that we eat in the way so that the environment is protected and there would be enough healthy food for everyone on the planet

Please answer the following questions concerning sustainable diet that fit you best.

- How often do you communicate about a sustainable diet in your peer group? (5 point Likert scale, 1 = *never or almost never*, 5 = *very often*)
- For different diet options, how expensive do you think they are? Please order the diet options below. The most expensive should be at the top. (order the options: ‘vegan diet’, ‘vegetarian diet’, ‘flexitarian diet (eating generally vegetarian, but every once in a while also meat or fish)’ and ‘Omnivore diet (eating everything)’)
- How expensive do you think a sustainable diet is in comparison to an unsustainable diet?
For example: if you think a sustainable diet is more expensive than an unsustainable diet, then your answer would be more on the right side of the scale. If you think a sustainable diet is cheaper than an unsustainable diet, then your answer would be more on the left side of the scale. (slider with 10 numbers: 1 = *cheaper*, 10 = *most expensive*)
- How much do you agree to the following statement: I think that a sustainable diet is too expensive. (7 point Likert scale, 1 = *strongly disagree*, 7 = *strongly agree*)
- On a scale from 0 to 10, how sustainable is your diet? (slider with 10 numbers: 1 = *not sustainable at all*, 10 = *very sustainable*)
- On a scale from 0 to 10, how sustainable do you want your diet to be in the near future? (slider with 10 numbers: 1 = *not sustainable at all*, 10 = *very sustainable*)

Sustainable Consumption

In this fourth section, we are interested in what you find important concerning sustainable consumption in general.

- On a scale from 0 to 100, how much do you agree with the following statement? (slider from 0 (*strongly disagree*) to 100 (*strongly agree*), centered at 50 (*neither agree nor disagree*))

Manipulation of CER

Nb: next, two texts were created and participants were randomly assigned to either the control or experimental text

Now you are going to read a text about shopping in one of the clothing stores. Please read the following text carefully and imagine you are a customer of the clothing store.

Control Text

Nestled in the heart of a bustling shopping district lies Clothing Store X, which has become a favourite destination for customers who care about fashion. From the moment you step inside the store, you're greeted with a warm welcome from the staff, who are eager to help you find what you're looking for.

The store offers a wide range of styles, from casual to formal wear, with an emphasis on quality fabrics and attention to detail. You notice that the other customers are enjoying their shopping experience, chatting amongst themselves and exchanging style tips. At the checkout, you'll find that the prices are reasonable, given the high quality of the clothing.

In short, shopping at Clothing Store X is an enjoyable experience. With its wide range of styles, personalized attention, and commitment to quality, it's no wonder that so many people keep coming back for more.

Experimental Text

Nestled in the heart of a bustling shopping district lies Clothing Store X, which has become a favourite destination for customers who care about the environment. From the moment you step inside the store, you're greeted with a warm welcome from the staff, who are eager to help you find what you're looking for.

The store offers a wide range of clothes, made from sustainable materials, including organic cotton, recycled polyester, and bamboo. You notice that the other customers in the store are sharing their shopping experience, chatting amongst themselves and exchanging style tips. At the checkout, you'll find that the prices are reasonable, given the high quality of the clothing and the company's commitment to sustainability.

In short, shopping at Clothing Company X is an enjoyable experience. With its wide range of clothes made with sustainable materials and commitment to sustainability, it's no wonder that so many people keep coming back for more.

Sustainable Consumption

Please indicate how much you agree with the following statements.

- After reading the text, I can see myself shopping at Clothing Store X (7 point Likert scale, 1 = *strongly disagree*, 7 = *strongly agree*)
- Clothing Store X finds taking care of the environment important and strives to minimize its negative impact on the environment(7 point Likert scale, 1 = *strongly disagree*, 7 = *strongly agree*)

- Other customers of Clothing Store X value the environment (7 point Likert scale, 1 = *strongly disagree*, 7 = *strongly agree*)
- On a scale from 0 to 100, how much do you agree with the following statement?
- 'After this shopping experience, I will buy and consume more environmentally friendly in the near future' (slider from 0 (*strongly disagree*) to 100 (*strongly agree*), centered at 50 (*neither agree nor disagree*))

Carbon Offsets

In this next section, we are interested in your opinions about carbon offsets, especially when taking a flight.

Flying produces huge amount of greenhouse gas (GHG) emissions and causes harmful effects to our environment. Recently, a new policy called "carbon offsets" was offered to airlines to compensate for their negative effects on the climate by reducing their emissions through another way.

For example, when you take a flight from Amsterdam to Barcelona, you can choose to offset the carbon emissions from your flight by paying the money (around €10-€20 per person) so that the airline will invest in a non-profit organization for renewable energy.

- How much do you feel personally obligated to protect our environment? (slider of numbers 1 to 10, 1 = *not obligated at all*, 10 = *strongly obligated*)
- How much do you care about other people's (e.g. family, friends) opinions about whether you act pro-environmentally? I care... (slider of numbers 1 to 10, 1 = *not at all*, 3 = *a little*, 5 = *a moderate amount*, 7 = *a lot*, 9 = *a great deal*)

When thinking about going on holiday by taking a flight, I feel...

- Guilt (slider of numbers 1 to 10, 1 = *never*, 3 = *sometimes*, 5 = *moderately*, 7 = *strongly*, 9 = *massively*)
- Shame (slider of numbers 1 to 10, 1 = *never*, 3 = *sometimes*, 5 = *moderately*, 7 = *strongly*, 9 = *massively*)

Now you are going on a holiday in Europe by flight.

- How likely will you pay for carbon offsets (around €10-€20 per person) to compensate for the emissions? I will ... pay for a carbon offsets (slider of numbers 1 to 10, 1 = *extremely unlikely*, 3 = *somewhat unlikely*, 5 = *neither unlikely nor likely*, 7 = *somewhat likely*, 9 = *extremely likely*)

Policy

*NB: for this section, participants were randomly assigned to think about either one of two ways of allocating costs of climate change: based on **contribution and profit** or based on **individual rights and freedoms***

Contribution and profit

In this final section, we are interested in what you think about who has to pay to help counteract climate change.

There are several ways to mitigate and adapt to climate change. However, we need to decide who has to pay for these measures. One type of the policies is to make sure those who contribute more to climate change have to pay more. For example, people emitting a lot of CO₂ by flying, eating meat or driving a polluting car have to pay more. On the other hand, those who are already putting in a lot of work to adapt to climate change would pay less. For example, people already insulating their house, not eating meat or not driving a car will pay less.

Individual rights and freedoms

In this final section, we are interested in what you think about who has to pay to help counteract climate change.

There are several ways to mitigate and adapt to climate change. However, we need to decide who has to pay for these measures. One type of the policies is to make sure people have individual responsibility and existing rights. For example, people whose house was damaged by flooding have to pay for the repair themselves. Another example is that everyone has to pay an equal carbon tax to the government to compensate for the damages.

Please think about the policy mentioned above. If this policy was implemented, how would it affect you?

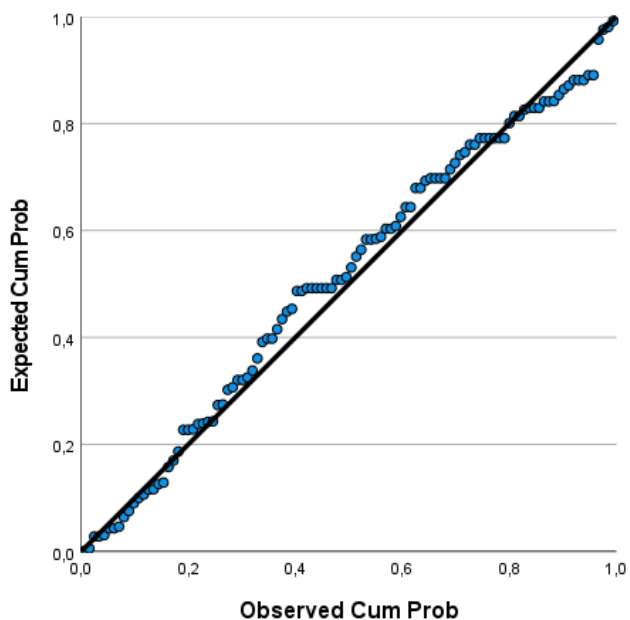
- This policy would affect me... (7 point Likert scale, 1 = *very negatively*, 7 = *very positively*)
- On a scale of 1 to 7, how much would you support climate policies based on this way of allocating the costs?
That is, those who emit more CO₂ have to pay more money than those who emit less CO₂. This money could be used to prevent the floods caused by climate change. (7 point Likert scale, 1 = *strongly oppose*, 7 = *strongly support*)
- On a scale of 1 to 7, how much responsibility do you think you have to help counteract climate change? (7 point Likert scale, 1 = *none at all*, 7 = *a great deal*)

End of survey

Appendix B

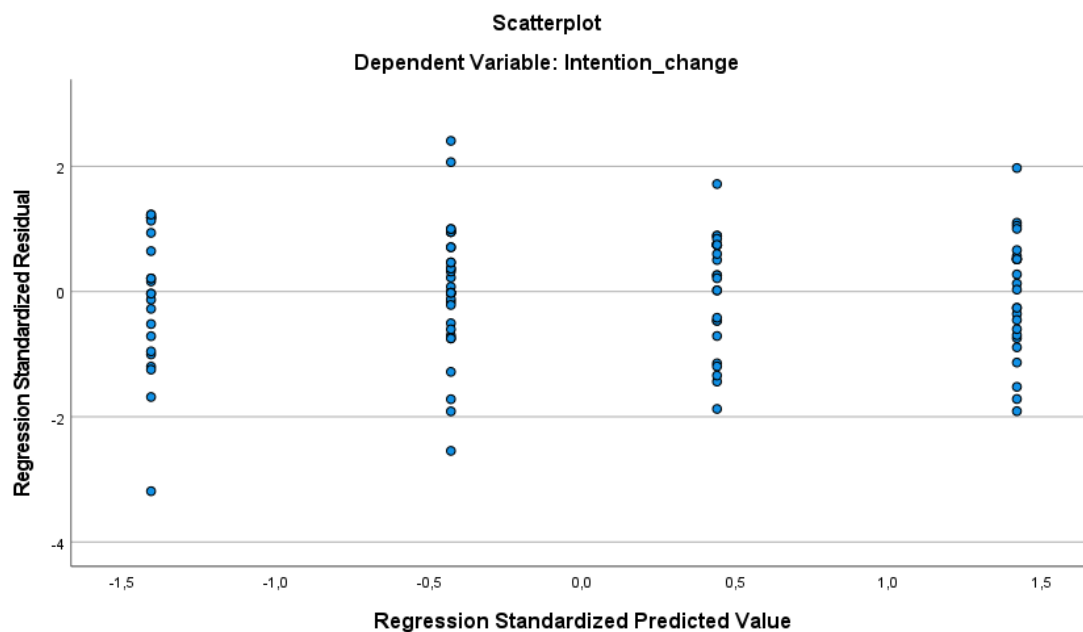
Graphs for Statistical Assumptions

Figure B1: Normal P-P plot of expected and observed cumulative probability.



Source: SPSS

Figure B2: Residual Scatter Plot of Change in Intention to Act Pro-environmental (dependent variable).



Source: SPSS