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Do Human values lead to feeling a sense of responsibility for Climate Change in the UK?

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A key debate in the media is whether individuals can make a difference in climate change and who is responsible to enact change. There are often arguments that people feel responsibility for the ongoing issue of climate change will be able to make micro changes which can positively influence the climate emergency. This feeling of responsibility can be a combination of factors such as personal beliefs, values, and social pressures. This study looks specifically at whether human values contribute to towards a feeling of responsibility. By understanding a populations feeling towards responsibility for climate change, non-profit organizations and lobbyist can better frame stakeholders concerns to policy makers and develop realistic policies to address the climate. Using data from the 2016 European Social Survey, we find evidence between different human values and feeling responsible for climate change and one's own beliefs.

Keywords: Human value scales, climate change, responsibility, UK

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INTRODUCTION

Whether on the news or on social media, people are increasingly questioning whether the world is experiencing climate change or a climate emergency. Indeed, climate change has often been positioned on political party lines (Milfont et al. 2015). Whitmarch (2011) highlighted the scepticism about climate change was closely linked to environmental and political values. He argued that the UK public between 2003 and 2008 was largely over exaggerated. However, recent public opinion in Europe has been shifting now that the perceived consequences of climate change become more evident (Poortinga et al. 2019).

Prati (2018) argues that the change in attitude towards climate change consequences could be the changes in human values. Therefore, if human values in Europe or the UK have shifted towards more universalism and benevolent views opposed to those values based on hedonism, achievement and power, then it could influence an individual's positive feelings of responsibility for climate change.

The differences in the UK regions could also proved to have variation in the effect on how people feel about climate change. Poortinga et al. (2019) has already identified differences between Central, Eastern, Northern and Western European countries. Therefore, exploring attitudes in the regional areas of UK could result due to differences in ideological factors, demographics and the trend of people in the same community grouping together when it comes to their beliefs. YouGov (2015) has confirmed this by dividing the UK into regions (London, South, Midlands/Wales, North, Scotland) and questioning samples in these regions whether they feel that the world's climate change is a result of human activity. The results showed that individuals living in London were the most likely to agree with climate change being man-made with 68% compared to the national average being 59% (YouGov 2015).

Therefore, we investigate the extent of which Human Values have an impact on one's feeling of responsibility for climate change. Using Schwartz's (1992) human value scale, we can identify how different motivations and attitudes can shape ones beliefs. Schwartz's scale has shown through numerous waves of the European Social Survey (ESS) that it is applicable in the European context (Davidov 2009). By addressing how beliefs and lifestyles of individuals relate to how they feel towards global warming/climate change through Stern and Dietz's (1994) value-basis theory, we can contribute to the academic discussion about individual responsibility for climate change. Using a quantitative analysis of 1,793 UK based respondents taking part in the 2016 European Social Survey, we discovered that different human values were significantly related to feeling responsible; however, not always in the direction hypothesised.

LITERATURE REVIEW

Environmental attitudes leading to feeling responsible for Climate Change

The concept of responsibility is one that establishes "a relationship between an individual and society" (Bierhoff and Auhagen 2001, p. 1). This implies that individuals may feel some form of a psychological contract with the needs of society if they feel embodied with a sense of responsibility. If one has a sense of responsibility between themselves and society, this could be replicated in their actions.

There can be many reasons as to why an individual may feel responsible or care about climate change. Some argue that those who have caused this problem are morally responsible for solving it (Caney 2005). This principle is often referred to as the "polluter pays" principle and although it has appeal it is unable to provide a full account of who should be responsible for global climate change. It also compares the ending moral theory with the notion of "common but differentiated responsibility" (Caney 2005). Yet, Jamieson (2010) argues that climate change should not be equated to morale

responsibility.

The value-basis theory developed by Stern and Dietz (1994) provides a new path for the link between psychological social research and attitudes towards the environment. Theorists (Van Liere and Dunlap 1978) argue that there is already a new perspective of this relationship between people and the environment developing within the Western world. There has been some research conducted when considering this link between values and attitudes on the environment. An example of this being that Stern (1995) conducted telephone interviews in Virginia and measured the three environment attitudes (egoistic, social-altruistic, and biospheric) as beliefs about the consequences of environmental conditions (Schultz 1999).

To investigate these connections, Stern et al. picked items from the self-transcendence value category of Schwart'z (1992) scale to reflect social-altruism and biospherism and items from self-enhancement to reflect egoism. Although, some of these value categories related positively with these measurements, the results did not provide evidence for the classification of different value-based environmental attitudes. This suggests that there has been difficulty in providing or understanding a direct link between these components, as well as there being a limitation in how one measures environmental attitudes. There also been little or less research conducted around the link between these values and the more recent concern for global warming/climate change. This study was also conducted more than 15 years ago and so these attitudes could have shifted due to societal beliefs or other factors.

Some environmental attitudes may be a result of a person's system of values (Schultz 1999) and there is still the chance to differentiate clusters of these attitudes grouped around different values (Schultz & Oskamp 1997). Previously mentioned in this study, Schwartz's value items were used on the assumption that these selected items would determine the attitudes. Since this time, some theorists such as Thompson and Barton (1994) have demonstrated alternate ways to measure these thoughts on the environment. These previous studies have also brought to light that researchers have often taken a qualitative approach within their methodology and demonstrates an opening of using a quantitative approach to perhaps improve the reliability of these findings.

Human Values and the Scale Factor

The Human Values Scale is a scale designed to group respondents in relation to their specific value orientations. The Scale has a range of a 21-item measurement (European Social Survey 2018) and was developed by Schwartz (1992). These Human Values of 21 items are then grouped into categories which include Openness to change, Self-transcendence, Self-enhancement and Conservation. The sub groups within these broader categories can be seen in Appendix B. Some theorists have argued that these values are imperative in wanting to understand the attitudes and behaviours of people (Pratti et al 2018). Understanding these behaviours means researchers can make links between their thoughts and their actions and to see what can contribute.

Davidov et al. (2009, p. 1) states the Human Values Scale as it allows researchers to

"study relationships among values, attitudes, behaviour and socio-demographic characteristics across countries". Values are often viewed as being as deeply rooted and can be classified as motivations that guide and explain "attitudes, norms, opinions, and actions" (Feldman, 2003; Halman and de Moor, 1994; Rokeach, 1973; Schwartz, 1992). This concept of values being contributions to an individual's attitudes and actions is relevant to our study and leaves an opening to research the validity of this.

The ESS Human Values Scale is originally from an earlier 40-item Portrait Values Questionnaire, some items were dropped or developed to include other ideas within the content of the 10 different values. Throughout the study, there will be four independent variables, this is in relation to the main four categories of the Human Value Scale; Openness to Change, Self-transcendence, Self-enhancement and Conservatism. The circular structure depicted in appendix 1 shows how the values relate and conflict with each other. The scale was used to measure "desirable, trans-situational goals, varying in importance, that serve as guiding principles in people's lives" (Davidov et al. 2009, p.6).

Openness to change

Openness to change as a value category includes sub-categories such as self-direction, hedonism and stimulation. It is often associated and measured with value items such as variety in life, creativity and curiosity (Schultz 1999). This need for creativity and curiosity could link well to one's need to find out more on global warming and what it means for them. One may argue that despite this, these individuals may not be as concerned with worrying about societal issues or the bigger picture such as climate change.

Another way that climate change can be categorised in the sense of existing concerns is the relation between nature and culture or the 'social process of problem definition' (Shove 2010). There are ongoing challenges faced when trying to understand and adapting to societal transformation in response to global climate change. This societal transformation could determine how values of an individual and their particular social culture or nurture influence their response to this global issue. Some societal theorists have delved into areas on climate change but there is still much to explore, and social theory will require thorough effort and engagement with new audiences (Shove 2010). More so, this potential exploration demonstrates a gap in the literature of cultural and societal norms and their meaning in relation to feelings towards climate change. This suggests the following hypothesis:

H1: People who are open to change will likely feel the most responsible for climate change due to their beliefs

Self-transcendence

In popular discourse, it is common to relate these drastic changes of sustainability as outcomes of individual choice (Shove 2010). Looking at it from this perspective, if one wants to move forward towards a more sustainable society and future, they must understand the environmental impact of their day to day choices. Calculators for an individual's ecological and carbon footprint have been generated with this impact

demonstrator in mind (Shove et al. 2013). It will consider their daily mobility, how often they heat up their house etc. and eventually presenting the results in tables. People can quickly see the difference they could make by adjusting small life choices. Human Values shape and determine the attitudes and eventually behaviours of people in their daily routines. Human Values could by proxy have a result on one's ecological footprint or lack of.

As a value category, self-transcendence includes sub categories such as benevolence and universalism which covers concerns for protecting the environment, being helpful, caring for others etc. These value items have the potential to directly link to one's feeling of responsibility for climate change. As human values shape our attitudes and behaviours, this link between being concerned for the environment and as a result, global warming, could be related to one identifying with the values of self-transcendence.

H2: People who practice self-transcendence are likely to feeling responsible for climate change.

Self-enhancement

Self-enhancement as a value category differs from self-transcendence as it includes themes of power and achievement (Schultz 1999). Other factors that can contribute to feelings around climate change are regional backgrounds or cultures of individuals. Some suggest that climate negotiations on how to resolve this issue must be widened to include a range of other issues such as "trade, investment, debt, and property rights" (Parks et al. 2010, pg. 1). Delving into other development issues such as these, connotes what is important to some and these highly regarded topics could be important to them due to their values and what they believe is best. If individuals identify with this human value category and are concerned about their state of wealth and power, then the issue of climate change might not be as high of a concern.

H3: People who are conscious about self-enhancement will least likely feel the most responsible for climate change due to their beliefs.

Conservatism

The Conservatism value category, which can also be labelled as tradition as suggested by Stern et al., 1995, includes 'conformity, traditionalism, and security.' (Schultz 1999). The human value-items for this category delve into politeness, social order, sense of belonging etc. (Schwartz 1994). These values are conceptualized as essential standards which act as principles in guiding a person's life (Rokeach 1973). Individuals who feel these values are important, for them it can normally determine or act as a determinant of attitudes and behaviours (Olson & Zanna 1994). If people are conscious about security, health etc. then it may influence their views of the global issue of climate change due to how global warming can have a negative impact on one's health.

H4: People who are conscious of conservatism will likely feel responsible for climate change due to their beliefs.

Conceptual Framework

The conceptual framework is depicted in figure 1 as the basis of our study and referred to it to understand the path of our research and the link between our variables. This study focuses on two points - human values (the independent variable) and the feeling of responsibility for climate change (dependent variable). As previously outlined there has been extensive academic literature that is based around these areas individually but little look at the relationship between them specifically.

Figure 1: Conceptual Framework

METHODOLOGY

Sampling

The data was acquired through the European Social Survey's (ESS) Round 8 (2016) survey. This dataset was chosen as it is a pan-European survey of attitudes/behaviour that seeks to document change over time, using stringent methodology (Jowell et al. 2007). The ESS Collection Team collected the data via face-to-face interviews in the UK during a fieldwork period of 1 month between the months of November and December (ESS 2018).

The ESS Collection Team define the target population as: "All persons aged 15 and over resident within private households in each country, regardless of their nationality, citizenship or language" (Beullens et al. 2016, pg.6).The ESS stress that participating countries should strive towards a response rate of 70% and above, however, within Round 7 of the survey, the UK fell short with a response rate of 43% (Beullens et al. 2016). Due to the figures not being released for Round 8, one can use Round 7 as a point of reference. National coordinators are told that gross sample sizes must be larger than usual for similar national surveys so that an effective sample size of 1,500 can be achieved (ESS 2016). In the case of the UK, it can be seen that in Round 7, the ESS Collection Team were able to obtain a net sample of 2,264 (Beullens et al. 2016).

The ESS survey used random route techniques whereby, individuals were selected through strict random probability methods at all stages (ESS 2016). As stated by Bryman and Bell (2011, p.180) this method of sampling allows for "no opportunity for human bias", with the selection process not dependent on an individual's availability. Two sampling domains exist; one for urban areas of the country and one for rural areas (ESS

2016). Cluster sampling is used for areas that do not have high population density, whereas, in urban areas with large populations, cluster sampling is not required as the distances between those sampled are small (ESS 2016). Cluster sampling may be used in order to save money when the population is sparse, and the researcher cannot sample from everywhere (Shackman 2001).

Main Variables

When measuring our independent variables, we used Schwartz's Human value Scale (1992) using a 6-point Likert scale (1 = very much like me and 6 = not like me at all) (Appendix X). The ESS Collection team used Stern's Value-Belief-Norm model (2000) as a general framework measuring the four areas of beliefs on climate change, concerns about climate change and energy security, personal norms, efficacy and trust, and energy preferences (Poortinga et al. 2016). Our dependent variable was measured on an 11-point Likert scale (0 = not at all and 10 = a great deal).

Data Analysis

We used Hair et al.'s (2010) four-step process for identifying missing data and applying remedies; data that was missing more than 10% of responses were deleted (Hair et al. 2010, pg. 47). We started with our dependent variable (DV), then worked our way through our independent variables (IV), as well as our control variables (CV). On completion of the data screening, we were then left with 1,793 responses. We then computed variables from our IVs to satisfy Schwartz's (1992) four human value Scale categories.

We conducted a Confirmatory Factor Analysis (CFA) for each of our variables in order to determine the factor structure of our dataset[1]. The CFAs for each variable can be found in Table 1. A CFA was done as it "can assess the contribution of each scale item as well as incorporate how well the scale measures the concept" (Hair et al. 2010, pg. 20).

Validity and reliability were measured through a composite reliability calculator. Composite reliability was chosen over Cronbach's Alpha as it takes error variance into consideration (Hair et al. 2010), with Raykov (2001) stating that Cronbach's Alpha may over or under-estimate reliability. As the composite reliability for each variable ranged between 0.6 and 0.7, reliability proved to be acceptable (Hair et al. 2010) (Table 1).

Table 1. CFA and Composite Reliability

Variable	CMIN/DF	CFI	TLI	RMSEA	Composite Reliability
Openness to Change	6.556	0.967	0.939	0.056	0.625
Conservation	6.556	0.967	0.939	0.056	0.688
Power & Achievement	3.35	0.997	0.99	0.036	0.73

[1] This was done using SPSS AMOS

Self-Transcendence	2.263	0.997	0.989	0.027	0.636

Control Variables

Dummy variables were created for our CVs; this was done for region, age and level of education[2]. We controlled for the region[3] because previous studies showed differences between the different regions in relation to human activity having a significant effect on climate change (YouGov 2015). Education was controlled for as previous studies found that relationships between level of education and ones attitudes towards climate change was significant, especially in Northern Europe (Poortinga et al. 2019).

Furthermore, we created dummy variables for the different age groups, categorising them in accordance with Pew Research Center (2018)[4]. This would allow us to test the different generations independently from each other as studies have previously found that age impacts scepticism towards climate change (Whitmarsh 2011). Finally, gender was also controlled[5] because studies have found that women tend to be more environmentally conscious (Milfont et al. 2015). The socio-demographic statistics are represented in table 2 and the correlations and means in table 3.

Table 2: Descriptive Statistics

	Frequency	Percentage
Gender		
Male	794	44.3%
Female	999	55.7%
Age		
Millennials	379	21.1%
Generation X	457	25.5%
Region		
North England	307	17.1%
South England	367	20.5%
London	152	8.5%
University Education	496	27.7%

[2] . In terms of level of education, we created a dummy variable for those who have a university education (0=no 1=yes)

[3] For region, the dummy variables created were for the north of England (0=no 1=yes), the south of England (0=no 1=yes) and London (0=no 1=yes).

[4] Millennials were categorised as those born between 1981 and 1996, whilst Generation X were categorised as those born between 1965 and 1980. The generations were coded as follows: Millenials (1=yes, all other generations =no), Generation X (1=yes, all other generations =no).

[5] (1=male 2=female)

Table 3: Means, Standard Deviation and Correlations in the UK

Correlations													
	Mean	S.D	1	2	3	4	5	6	7	8	9	10	11
1. Responsibility	5.92	2.473											
2. Conservation	2.78	0.826	-0.043										
3. Openness to Change	2.86	0.758	-.119**	.312**									
4. Power and Achievement	3.66	0.985	0.001	.306**	.461**								
5. Self-Transcendence	2.11	0.659	-.311**	.384**	.437**	.144**							
6. Gender	1.56	0.497	0.001	-0.026	.050*	.116**	-.110**						
7. Millennial	0.21	0.408	-.061**	.080**	-.124**	-.209**	-0.001	0.041					
8. Generation X	0.25	0.436	.083**	0.03	0.026	-0.024	-0.002	0.001	-.303**				
9. North England	0.17	0.377	-0.023	-0.021	-0.007	-0.018	0.029	-0.015	-0.003	.054*			
10. South England	0.2	0.404	.048*	.083**	0.033	.064**	-0.018	0.032	-0.029	-0.005	-.231**		
11. London	0.08	0.279	.049*	0.008	-.070**	-.099**	-.071**	0.005	.053*	0.006	-.138**	-.154**	
12. University Edu	0.28	0.447	.181**	.120**	-.049*	-.059*	-.103**	0.004	.065**	.128**	-0.036	.094**	.107**

** Correlation is significant at the 0.01 level (2-tailed). * Correlation is significant at the 0.05 level (2-tailed).

FINDINGS AND ANALYSIS

A simple linear regression was conducted in order to test our hypotheses. This regression allows one to "model the relationship between two variables" (Field 2012, pg. 294). We also ran a multiple regression as it is the "appropriate method of analysis when the research problem involves a single metric dependent variable presumed to be related to two or more metric independent variables" (Hair et al. 2010, pg. 16).

Hypothesis 1 expected that those who are open to change will likely feel the most responsible for climate change due to their beliefs. It can be seen that openness to change is not significantly related to the feeling of responsibility towards climate change (b= -0.394, p <.1) (Table 4, Model 2), meaning that hypothesis 1 is not supported.

Hypothesis 2 speculated that those who practise self-transcendence are likely to feel responsible for climate change. Here, self-transcendence is significantly related to the feeling of responsibility for climate change (b= -1.117, p < .001) (Table 4, Model 4). However, this is a negative coefficient; this means that those who are self-transcendence are more likely to feel less responsibility towards climate change.

Hypothesis 3 predicted that those who are conscious about self-enhancement would least likely feel the most responsible for climate change due to their beliefs. Self-enhancement is not significantly related to the feeling of responsibility towards climate change (b= 0.001, p <.1) (Table 4, Model 5), thus, disproving this hypothesis.

Hypothesis 4 expected that those who are conscious of conservatism will likely feel responsible for climate change due to their beliefs. Conservation significantly related to the feeling of responsibility for climate change (b= -0.196, p <.0.1) (Table 4, Model 3). Again, this is a negative coefficient, meaning that those who are conscious of conservatism will likely feel less responsible for climate change. However, when conservation was measured with the other independent variables (Table 4, Model 1), it read as a positive coefficient (b= 0.165, p <.05). This could be caused by the fact that value types that place closely on the human values scale are compatible; resulting in individuals identifying themselves in both categories as they can share various value items (Schwartz 1994).

We also identified some findings that were not hypothesised. We found that millennials significantly relate to the feeling of responsibility for climate change (b= -0.316, p < .05); this is a negative coefficient, meaning that those who aren't millennials will feel more responsible for climate change. Interestingly, Generation X significantly relate to our dependent variable (b= 0.279, p < 0.5). Additionally, those with a university degree also significantly related to the feeling of responsibility for climate change (b= 0.75, p <.001).

Table 4. Regression Table for Hypothesises

	Model 1		**Model 2**		**Model 3**		**Model 4**		**Model 5**	
	DV: Responsibility to reduce climate change		DV: Responsibility to reduce climate change		DV: Responsibility to reduce climate change		DV: Responsibility to reduce climate change		DV: Responsibility to reduce climate change	
	b	s.e	b	s.e	b	s.e	b	s.e	b	s.e
Constant	7.785***	0.336	6.7***	0.292		0.277	8.255***	0.277	5.591***	0.292
Openness to Change	-0.041	0.09	-0.394	0.076						
Conservation	0.165*	0.077			-0.196**	0.07				
Self-Transcendence	-1.202***	0.099					-.117***	0.084		
Power and Achievement	0.097	0.067							0.001	0.061
Millennial	-0.316*	0.148	-0.454**	0.148	-0.329*	0.149	-0.334*	0.142	-0.364*	0.152
Generation X	0.279*	0.134	0.241	0.139	0.261	0.14	0.271*	0.133	0.245	0.14
North England	-0.008	0.152	-0.045	0.158	-0.037	0.159	-0.013	0.152	-0.036	0.159
London	0.184	0.204	0.276	0.212	0.341	0.213	0.177	0.204	0.339	0.214
South England	0.16	0.143	0.231	0.149	0.247	0.15	0.195	0.143	0.216	0.15
University Edu	0.75***	0.127	0.926***	0.131	0.987***	0.132	0.79***	0.126	0.951***	0.132
Gender	-0.178	0.112	0.042	0.115	-0.002	0.115	-0.154	0.111	0.008	0.116
R Squared	0.133		0.056		0.046		0.128		0.042	
Adjusted R Squared	0.128		0.052		0.042		0.125		0.038	
F-Test	(11)24.834 p<.001		(8)13.312 p<.001		(8)10.825 p<.001		(8)32.860 p<.001		(8)9.809 p<.001	

Note: '***', $p < .001$; '**', $p < .01$; '*', $p < .05$; '†', $p < .1$.

DISCUSSION

This paper aimed to answer the question concerning what human values would lead to an individual sense of responsibility for climate change. The goal was to provide insights as to if certain dominate human values could be used to help encourage individuals to take on the climate emergency from an individual standpoint. We found evidence that two human values, self-transcendence and conservatism- in the UK populace were contradictory to findings from other European studies. The implications of this is discussed further.

As mentioned in the prior section, self-transcendence proved to be a significant indicator of the feeling of responsibility for climate change; but negatively. This means that those who are self-transcendent are significantly less likely to feel a responsibility towards climate change. This contradicts previous research has confirmed that those who practise self-transcendence are more likely to hold concern over the risks and consequences of climate change (Corner et al. 2014). Furthermore, Poortinga et al. (2011) finding that self-transcendent individuals are more likely to believe the world's climate is changing. But, while one can believe the climate is changing, they did not investigate who might feel responsible for the changes. Although, in a follow-on study Poortinga et al. (2019) and Lapacz et al. (2019) both found evidence that the different regions of Europe with high levels of self-transcendence have varying attitudes towards climate change. This shows that this group of individuals may believe in and have concerns about climate change, but do not necessarily feel responsible for it. If looking at studies when the environment wasn't dominating the news, Schultz and Zelezny's (1998) study indicated that those with self-transcendent values are more likely to act in a pro-environmental way when they perceived harmful consequences for damage to the environment and laid responsibility onto themselves for this damage. However, they came to this finding as a result of isolating the biospheric values within self-transcendence. It could be argued that the only way of these factors relating, is by the act of isolating the biospheric values - which could explain why our results differed. Because those who are self-transcendent are expected to be concerned for the welfare of others (Davidov et al 2008), there are implication that those pursuing measures for climate change need to consider a sense of responsibility to other may differ then a sense of responsibility to society as a whole.

When we analysed hypothesis 4, we found that conservatism was significantly related to the feeling of responsibility for climate change, albeit a negative relationship. This suggests that those who do not hold values of conservatism will likely feel responsible for climate change. This is contrary to Gromet et al.'s (2013) study that found more conservative individuals would be less likely to purchase an energy efficient light bulb if it has been labelled with an environmental message. This was further replicated in Cranny-Evans et al. (2019) exploration into human values and purchasing electronic goods in Poland. Poortinga et al. (2011) add to this as their findings showed that those with conservative views were more likely to have uncertainties around the reality and severity of climate change. This tells us that individuals with conservative views are almost sceptical of climate change and thus, do not feel responsible for reducing climate change.

Although not hypothesized, our control variable add additional insights. Our findings

show that millennials are less likely than other generations to feel the responsibility to reduce climate change, whereas, Generation X were found to feel more responsible for climate change than the other generations. A study by Kuppa (2018) found that 29% of millennials stated that the issue of global warming is "extremely important" or "very important", falling short of Generation X; at 33%. More interestingly, the study highlighted that 18% of millennials had not given any thought about global warming before the day they had been questioned, with 47% stating they had given "a lot" or "some" thought into it (Kuppa 2018). Comparatively, 58% of Generation X were found to have given "a lot" or "some" thought into global warming (Kuppa 2018). This study supports our findings as it shows that Generation X think about the environment more than millennials.

Our research identified that those with a university degree would feel more responsible towards reducing than those who do not have a university degree. A study by Economic and Social Research Council (ESRC) (2011) proved that the higher educated an individual is, the more likely they are to display environmental credentials. Results of the ESRC study found that those with degrees are 25% more likely than those with no qualifications to show pro-environmental practises. Similar results can be seen in Smith et al.'s (2017) study whereby, they proved that the higher the education level of an individual, the more likely they are to choose climate change as the most important environmental issue. These studies support our finding that individuals with a university degree are more likely to feel a responsibility to reduce climate change.

THEORETICAL IMPLICATIONS

Previous studies have explored the relationship between environmental attitudes/behaviours and the human value of self-transcendence. An example of this being that when Simmons, Binney, and Dodd (1992) added a new item, "a clean environment", and conducted a factor analysis. The results showed that this new value was related to items belonging in the self-transcendence category such as a world of freedom and a world of peace (Karp 1996). This study's result is a theoretical implication due to us not adding a separate item into our study and by this research proving there is a relationship between these factors if applied, theoretically. This also proves a positive relation, which differs to our findings overall.

LIMITATIONS

It is important to outline the limitations of the study as they can impact the validity or credibility of results or prove difficulty when conducting the research. One area that should be taken into consideration in terms of feeling responsible, is that it may be subject to social desirability bias. As the ESS data is collected in person, it could influence the respondent's answers, despite us finding little evidence of feeling of responsibility for climate change. Furthermore, due to this being a cross-sectional study, we cannot make causal inference. Therefore, future research could explore the individual's actions across time that show if they have actually taken responsibility and engaged in behaviour changes.

CONCLUSION

The aim of this research paper was to determine the relationship and contribution that Human Values have on the feeling of responsibility of climate change. The results exemplify that certain human values have a bigger role in impacting these attitudes. It has been highlighted that there are numerous other factors to consider that act as attributes and could have implicated this study. This paper has identified that this notion of responsibility for climate change differs to existing literature that suggests there are concerns towards climate change regarding human values. This study contributes to literature around this topic by demonstrating there are still areas yet to be explored.

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