

Environmental Sensitivity: The Place of Emotions

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Abstract: This article investigates the concept of environmental sensitivity (ES). Faced with climate urgency and the #Flygskam phenomenon specifically. It considers negative feelings as an integral part of ES. A qualitative exploratory phase enabled the development of a new ES scale. This scale was subsequently validated in a quantitative phase. The outcome extends the concept of environmental sensitivity and enriches it with more emotional dimensions, like cold-glow feelings and eco-anxiety.

Keywords: Environmental sensitivity, Eco-anxiety, Cold-glow feeling, “Flygskam”

Introduction

Greta Thunberg, environmental activist and Times Magazine personality of the year 2020, has helped reveal the environmental sensitivity (ES) of many individuals. ES influences many behaviours like “flygskam”, or flying shame, “the movement that encourages people to refrain from flying to lower their carbon footprints” (New York Times, 2019). The movement made an impact, as airlines Easy Jet and Air France - KLM reacted quickly by announcing the compensation for the carbon emissions of their flights. This suggests that we must expand our understanding of ES in the context of accelerating climate change to include consumer’s emotions like shame, guilt and anxiety.

On an academic level, ES and its impact on individuals’ behaviours have fueled research studies since the 1980s as well as new terminology to designate environmentally sensitive consumers; “ecologically concerned consumers” (Kinnear, 1974), “socially conscious consumers” (Webster, 1975), “environmentally conscious consumers” (Schlegelmilch, Bohlen and Diamantopoulos, 1996), “environmentally sensitive consumers” (Chawla, 1998), and “green consumers” (Diamantopoulos *et al.*, 2003). However, these studies do not lead to a consensus on the identification of the underlying dimensions of these similar concepts. For example, Diamantopoulos *et al.*, (2003) compare 133 measures across three dimensions: environmental knowledge, attitudes and behaviour, before proposing a new measure in five dimensions of scales to measure environmental knowledge, attitudes, recycling behaviour, political action and purchasing behaviour, without considering the influence of recent climate change on people.

In this study, we will employ the term environmental sensitivity defined by Chawla (1998, p. 11) as “*a predisposition to take responsible environmental action.*” However, recent societal developments show that ES includes cold glow feelings like shame and anxiety, as opposed to “*warm glow of giving*” (Menges, Schroeder and Traub, 2005; Hartmann *et al.*, 2017). Another limit is the evolution of the impact of the societal dimension. Indeed, ES is a behaviour influenced and shared between individuals, such as at the 2019 Montreal climate march that gathered half a million people. Consequently, the egocentric measures of this construct no longer seem to suffice.

To respond to these limits, this article proposes an updated ES measurement by employing the Diamantopoulos *et al.*, (2003) technique. An exploratory qualitative study was first conducted. A quantitative study then enabled to propose and validate an ES measuring tool. The exploratory qualitative study was carried out with 27 participants and the quantitative study with 233 respondents. The end-product is a three-dimensional ES scale that considers environmental consciousness, eco-anxiety and cold glow. In terms of nomological validity, the results highlight that the environmental consciousness dimension significantly impacts the influence on the intention to reduce air travel, and the cold glow dimension positively influences the intention to offset the emissions of carbon linked to air travel.

Literature Review

According to Kinnear *et al.*, (1974), individuals who possess a strong ecological conscience have a sounder understanding of the environmental threat posed by increased human activity on the planet, such as industry. These individuals, through their purchases, go beyond their primary needs of satisfaction linked to the product and feel accomplished when performing symbolic consumer acts (Robinot, 2007). This strengthens their identity and their status in society (Solomon, 1983; Petkus, 1992). Initially, studies regarding environmentally concerned people were based on research to assess the degree of social responsibility of individuals (Webster, 1975). Kinnear, Taylor and Ahmed (1974) pointed out that social awareness is also

expressed with regards to the environment. Hence, an environmentally concerned individual tends to minimize their negative impact on the environment at all levels of the consumption process, from acquisition to product disposal (Kreziak *et al.*, 2020). The consumer's purchase behaviour reflects a lifestyle in keeping with their values (Stern *et al.*, 1999).

Two Perspectives on Environmental Sensitivity (ES)

The exploration of ES may be done by using one of two perspectives: egocentric and socio-centric.

Egocentric Perspective

The first approach groups studies that focus on identifying the behavioural determinants of ES individuals such as sociodemographic characteristics, attitudes and values.

Using purely sociodemographic variables leads to contradictory results (Kinnear *et al.*, 1974). Some studies show no correlation regarding age (e.g. Anderson *et al.*, 1974), whereas others demonstrate a positive relationship (e.g. Giannelloni, 1998). Diamantopoulos *et al.*, (2003, p.467) carried out a retrospective analysis of over 136 studies and measurements of ES published between 1972 and 1998. Their conclusions were that: *“the large majority of studies have failed to review all aspects of environmental consciousness and revealed several problems with sample selection procedures.”*

A great deal of research has focused on the connections between attitude and the various behaviours linked to environmental preservation (e.g. Kaiser *et al.*, 2003; Oreg and Katz-Gerro, 2006). This groundwork made it possible to establish a link between an individual's evaluative mental process (often unconscious) and their behaviour. Ajzen (1991), however, suggested that models such as Theory of planned behavior, be further investigated, including the role of emotions. Smith *et al.*, (1994) established that the association between attitude and behaviour linked to environmental concern is weak because of the lack of consideration for consumers' emotional reactions. Some authors have worked on positive emotions linked to responsible consumption. Giebelhausen *et al.*, (2016) show that engaging in sustainable actions causes “warm-glow feelings” which can lead to more favourable assessments of the consumer experience. Positive emotions could thus stimulate more sustainable behaviours (Onwezen *et al.*, 2013; Rezvani *et al.*, 2017; Soleil and Trudel, 2017; White *et al.*, 2019). Peter and Honea (2012) showed that positive emotions, such as joy and pride, can inspire people to reduce their consumption of plastic water bottles. To the best of our knowledge, no research, to our knowledge, has ever addressed how negative emotions can explain responsible behaviours.

Previous research confirms the association between ES and individual values. Values manifest lasting beliefs that one mode of behaviour is preferable to another. Stern, Dietz and Guagnano (1999) suggest the natural environment would be a new value in contemporary societies. They suggest that individuals will, therefore, behave in an environmentally friendly manner if they understand their harmful consequences. Riis and Gundelach (1992) identified the evolution of generations, changes in the life cycle of individuals and periodic influences. Ultimately, these studies cannot prove a correlation between individual values and protective behaviour (Gärling *et al.*, 2003). Certain psychological mechanisms can block the spillover effect (Tørgersen and Ölander, 2003). As Schwartz (1977) explains, when the cost of behaviour modification is too significant for an individual, they will react with a post-rational defence. In this perspective, only collective action can solve environmental problems. An individual, on the other hand, will act according to social ethics and freedom of choice.

Socio-centric Perspective

This approach groups work that advocates a global analysis of how individuals take the environment into account. The set of variables that can change collective behaviour are considered (Bagozzi, 1977; Shapiro, 1978). The need to effect social change to "promote, facilitate and ensure environmentally responsible behaviour" is highlighted (Le Gall, 2002). However, Le Gall (2002) emphasizes the absence of solutions for the implementation of a collective transition; the sustainable development movement. Furthermore, societal environmental awareness is the key to achieving more sustainable development. For Corraliza (2001), environmental awareness emerges when certain actions based on values, beliefs and regulations try to reduce the negative impact of human activity on the environment. As stated by Grob (1995), to have environmental consciousness, emotions must be attached to the awareness that there are environmental issues, as they are often linked to people's behaviour. In this sense, certain feelings, such as shame about flying or guilt about polluting, are markers of the weight of collective opinion in individuals' behaviour. In this sense, Brennan and Binney, (2010, p.144) qualify shame "*as an emotion that individuals experience when other people who are significant to them become aware of their socially unacceptable behaviour*". For these authors, "*guilt and shame both carry messages about the moral consequences of one's action and "doing the right thing"*".

Both approaches, egocentric and socio-centric, complement our understanding of ES. Certain aspects are specific to the individual; eco-responsible purchasing, intention to have a positive impact on the planet; whereas others express themselves through the group or awareness of human well-being, like feelings of shame or guilt. All these elements have led to updating the ES concept.

Exploratory Study

To better appreciate the drivers of ES, 27 respondents were interviewed on how they think, feel and behave regarding the environmental impact of travelling by plane. The interviews were conducted using an guide divided into five themes: mobility and air activity, awareness of the ecological problem posed by air travel, individual reactions to this question, the conditions that would make it possible to change travel habits, and the relationship with ecology. The interviews lasted an average of 50 minutes each. The individuals were on average 46 years old. The results revealed people's evolved ES. Based on the interviews, a three-dimensional construct was created. The three dimensions are environmental consciousness, eco-anxiety and cold-glow feelings.

Results:

Environmental consciousness as defined by Diamantopoulos et al., (2003) have been founded in the interview: "*We close our eyes as usual. Ah-ah. It's terrible. But what I am saying is awful...no, no, well we think about it, yes. But if I already sort my trash... only buy local... and no more plastic... in a short distribution chain... without packaging... I don't use my car... I use a bike or public transport and that I only buy clothes that don't destroy the water and that...*) (Interview-Extract1).

Eco-anxiety linked to climate change and the impact on humans and the planet emerged thought this phase : "*Not preoccupied... rather optimistic about the rise in consciousness, but worried that it won't spread globally. Some countries won't want because they aren't economically*

developed... We will have completely different opinions and politics. So, it will make the world even more differentiated” (Group 1 Interview 4.)

Cold-glow feelings emerges from the interviews as a negative feelings related to the human impact on the environment. “Um, no... honestly, I don’t... well now I am starting to have a bad conscience, but seriously when I buy my plane ticket, I am not telling myself, “Oh no, I am polluting the planet!”. I am starting. I am starting. I think flying is practical, its quick, but I don’t like this method of transportation.” (Group 1 _interview7).

Main Study

Methodology

Following the analysis of the responses obtained in Study 1, 5 experts generated 38 items associated with the 3 dimensions: environmental consciousness, eco-anxiety, and cold-glow feeling. A quantitative study with 231 respondents (made up of 153 women and 75 men) was performed to test the items and their nomological validity.

Results

Principal component analysis (PCA) followed by Promax rotation allowed dimensionality examination and suggestions for item deletion. A three-factor solution with 11 items was the most appropriate solution based on a variety of common criteria: inspection of screen plot, interpretability, and eigenvalues greater than unity (D’Astous and Boujbel, 2007; Sung and Tinkham, 2005). The scale showed adequate convergent reliability and validity. All items had high factor loadings, and exceeded the cut-off point of 0.50 (Hair et al., 2009); reliability coefficients exceeded the cutoff standard of 0.70 (Murphy and Davidshofer, 2001); and AVEs were > 0.50 (Fornell and Larcker, 1981; Hair et al., 2009) (see Table 1- in Appendix).

Conforming to Henseler et al., (2016) guidelines, we used the suggested criteria for overall model fit and assessed each of the measurements and structural models. For the overall model, the SRMR value indicated an acceptable fit. The SRMR (0.090) was close to the recommended cut-off value suggested by Hu and Bentler (1999). Whalers et al. (2003), indicated that a relatively substantial amount of information is being considered at the measurement and structural levels.

The structural part of the model was subsequently studied. As stated in Figure 1, R² values are good, at 19% and 24%. All path coefficients prove statistically significant, with ‘T’ values greater than 2 and 95% confidence intervals that do not include zero.

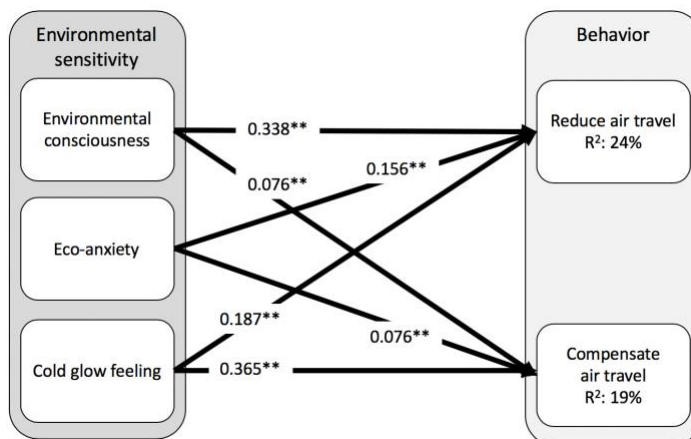


Figure 1: Conceptual Model

Discussion - Conclusion :

This study made it possible to propose an updated definition of ES to: "*environmental awareness associated with negative feelings (cold glow, eco-anxiety) which accompanies the adoption of pro-environmental behaviour*". The integration of Negative feelings like environmental shame, eco-anxiety, are increasingly present in environmentalists' discourse on ES. It is therefore important to integrate these notions into previous research on the subject (Kinnear *et al.*, 1974; Diamantopoulos *et al.*, 2003; Schlegelmilch *et al.*, 1997; Webster, 1975; Hartmann and Apaolaza, 2006). With regards to the environment, the results are consistent with psychology studies that have already made associations between feelings of shame and guilt. (Damasio, 1994; Abe, 2004). Also, facing the socio-centric aspect of these feelings, which is lacking in most ES measures, these feelings could be "*Associated with a clearly understood moral obligation towards others*" (Brennan and Binney, 2010, p.143).

When considering the application of the ES construct, this study exposed a history that was expressed differently when it had the intention of either reducing air travel or compensating carbon emissions. This theoretical contribution is a source of recommendations for the tourism sector. Airlines are recommended to base their communication campaigns on carbon offsetting around social interactions. For example, with the possibility for consumers to share that their trip is carbon neutral on social networks to reduce the guilt and shame of flying and increase social acceptance. For environmental organizations, eco-anxiety and the desire to have a positive impact on the planet are the levers to use to encourage using other modes of transport when possible.

On the methodological level, this study offers a current measurement of ES in 11 items and 3 dimensions, which makes it possible to better understand the behaviours with a history associated with the environment. To strengthen the validity of this scale, it would be interesting to apply it to phenomena other than Flygskam and to other cultures, such as Asian cultures, where saving face appears as an important motivation for consumption choices.

To conclude, both studies in this research are concerned with negative feelings (Damasio, 2003; Damasio, 1994; Brennan and Binney, 2010) associated with ES. In the case of flygscam, these studies have revealed two levels of commitment: the most advanced ecologists in terms of environmental consciousness will reduce their air travel, while individuals who experience cold glow warming (shame and guilt) will further reduce their carbon emissions in response to a likely cognitive dissonance.

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Appendices

Table 1.

Dimensions	Items (with p value 0,000)	Loading	Outer Weights	Cronbach's Alpha	Composite Reliability	Average Variance
Environmental consciousness	I am trying to have a positive impact on the planet	0.861	0.406	0.816	0.868	0.569
	I do my best not to buy from companies that pollute	0.808	0.320			
	I always chose the product that has the least negative impact on the environment	0.776	0.247			
	I do what I can to protect the environment	0.755	0.265			
Eco-anxiety	Thinking about climate change scares me	0.832	0.266	0.836	0.891	0.672
	Thinking of climate change often worries me	0.866	0.318			
	I fear the end of the world (rising waters, extreme temperatures, etc.)	0.775	0.304			
	I think that our current way of life will kill us	0.801	0.335			
Cold-glow	The feeling of guilt pushes me to change my behaviour	0.925	0.429	0.824	0.892	0.735
	I feel guilty for consuming earth's resources	0.894	0.450			
	I am ashamed of not taking daily action to reduce my environmental impact.	0.748	0.369			

KMO Index and Bartlett Test

Kaiser-Meyer-Olkin Index for measuring sampling quality.		,783
Bartlett's Sphericity Test	Chi-square approx.	1202,985
	ddl	55
	Significance	,000

Structure Matrix

	Components		
	1	2	3
Ecoanxiety3	,889		,445
Ecoanxiety1	,858	,158	,472
Ecoanxiety9	,760	,155	,428
Ecoanxiety5	,746	,111	,430
Envi.Con.2		,814	,149
Envi.Con.1	,239	,809	,139
Envi.Con.3		,795	,153
Envi.Con. 4	,177	,788	
CW Culp	,520	,189	,904
CW Coulp	,445	,292	,869
CW Shame	,453	-,112	,793

Extraction method: Principal component analysis.

Rotation method: Promax with Kaiser normalisation.