



# Carbon footprint mitigation on vacation: A norm activation model

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## ABSTRACT

The norm activation theory and past research suggest that ecologically appropriate behaviors increase when individuals (a) ascribe personal responsibility (AR) to protect the environment and (b) are aware of the consequences (AC) of their actions. We examined the influence of AR and AC on ecological norm salience and reported pro-environmental behavior while people were on vacation. Data were obtained from a random sample of the general public in the Netherlands ( $n=1144$ , response rate=88%). As predicted AC influenced AR. Norm salience partially mediated the influence of AR and AC on reported behavior. As AR and AC increased, norm salience increased; this model accounted for 32% of the variance in the norm concept. As all the three constructs (i.e., AR, AC, norm salience) increased, respondents were more willing to engage in pro-environmental behavior. The partial mediation model accounted for 44% of the variance in reported behavior. Findings here support the continued use of the norm activation model to explain tourist behavior.

## MANAGEMENT IMPLICATIONS

This article demonstrated that to mitigate unintended negative environmental consequences of tourists on holidays, managers should be aware of:

- How travelers' sense of entitlement, the symbolism of freedom from everyday expectations, and a lack of awareness of their impact can lead to negative ecological behaviors.
- Messaging that makes travelers aware of the consequences of their actions can increase their ascription of responsibility toward the environment and promote pro-ecological behaviors.
- Messaging that increases the salience of descriptive and injunctive norms can guide travelers' behavior to act in more pro-ecological ways.

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## 1. Introduction

Greenhouse gases (GHG) and carbon emissions are critical areas of concern for the global community. Left unchecked, global climate change potentially threatens both the natural environment (e.g., flooding of coastal resources due to rising sea levels), and the health and safety of individuals (e.g., increased skin disease). Although research has examined what people can do in their daily lives to reduce their carbon footprint, less attention has been focused on the behaviors of individuals when they are away from home. Traveling and tourism contributes between 5% and 14% of the world GHG emissions (Simpson, Gössling, Scott, Hall, & Gladin,

2008). More than half of these emissions are due to air travel, with the majority of remaining emissions coming from other land and sea-based modes of transport (Peeters, Williams, & Gössling, 2007, p. 30). Given the significant amount of carbon produced by travel and tourism, pro-environmental decision making for tourists merits attention (McKercher, Prideaux, & Cheung, 2010; Reilly, Williams, & Haider, 2010).

Climate change and the need to change human behavior in response are increasingly accepted and identified as key challenges for tourism (Bramwell & Lane, 2012; Buckley, 2012; Gössling, Hall, Ekström, & Engeset, 2012; Scott, 2011; Weaver, 2012). While policies, management measures, and technological innovations can reduce tourism's climate change impacts (Buckley, 2009), a shift to lower-carbon practices would likely require engagement of tourists (Urry, 2011). This article contributes to the literature by examining psychological antecedents of sustainable

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transportation usage among tourists.

Context is an important consideration for understanding the psychology that drives decision-making. Specific social norms can be stimulated and become salient by the context within which people frame their behaviors. Some travelers recognize that their actions have a carbon footprint, but believe that their pro-environmental behaviors at home balance whatever impact they might incur while on vacation (Dickinson, Robbins, & Lumsdon, 2010). For other travelers, climate change is not salient while on vacation and they are unwilling to change their travel choices and make perceived sacrifices to behave more pro-environmentally (Hares, Dickinson, & Wilkes, 2010). Even people who are knowledgeable about climate change and exhibit strong pro-environmental norms and behaviors in their daily lives may have trouble seeing their actions on vacation in a larger context of overall sustainability (Barr, Shaw, Coles, & Prillwitz, 2010).

Traveling poses a number of barriers to pro-environmental behavior. For example, flying is the only practical way to get to some destinations. There is also the symbolic importance of freedom that underlies our attitudes about being on vacation and flying; freedom from our normal daily constraints and freedom to enjoy ourselves (Shaw & Thomas, 2006). When we are “on” vacation we are “off” the clock and feel entitled to more choices and conveniences. Traveling might even be a constituent for meaning in life (Ryan, 2010) and therefore an activity that is not easy to change. Finally, travelers may not perceive the same sense of personal responsibility when in a foreign context. This may be attributed to beliefs about (a) the insignificant effect any particular individual will have in the scheme of things, (b) an external locus of control that relieves people of personal responsibility for the impacts of their behavior because it is literally out of their control, or (c) the temporal distance, spatial distance, and ambiguity of connection between their personal actions and the environmental effects of their actions (good or bad) (Hares et al., 2010; Lorenzoni, Nicholson-Cole, & Whitmarsh, 2007; Stoll-Kleemann, O’Riordan, & Jaeger, 2001). Feeling both entitled and powerless may contribute to why people are less likely to act pro-environmentally while on vacation.

Despite the challenges of minimizing one’s carbon footprint while traveling, some people do take pro-environmental actions while on vacation. Travelers who can justify pro-environmental behaviors, despite barriers or inconvenience, are more successful at making pro-environmental choices (Maio, Olsen, Allen, & Bernard, 2001). They perceive their pro-environmental norms to be rational, not just ideological, an important differentiation in predicting pro-environmental behavior. Two factors influencing environmentally friendly behavior on vacation are personal norms and environmental concern (Mehmetoglu, 2010). This article adopted the Norm Activation Model (Schwartz, 1968, 1977) to examine the roles of norm activation and ecological norm salience on pro-ecological behavior among leisure travelers.

### 1.1. Norm activation and salience

Protecting air quality and reducing GHG emissions is a collective commons challenge. A pollution-free environment can only be achieved when the vast majority of individuals minimize pollution generating behavior. To encourage environmentally responsible collective action, the presence of both norms that prescribe acceptable behaviors and ecological salience that stimulate our awareness of the need to act can be a powerful combination.

Norms can refer to what most people are doing (a descriptive norm) or to what people should or ought to do (an injunctive norm) in a given situation (Cialdini, Kallgren, & Reno, 1990). Cialdini and Trost (1998) define norms as “rules and standards that are understood by members of a group, and that guide and/or

constrain social behavior without the force of laws” (p.152). Norms, however, do not always guide behavior. For example, despite widespread opposition to air pollution, pollution generating behaviors continue to occur.

To understand this words and deeds problem, it is important to consider both individual differences and situational factors that serve to activate norms and influence behavior. Norms are “activated” when certain conditions are met (Schwartz, 1973, 1975, 1977). First, individuals need to possess an awareness of the consequences their behavior has on the needs of others or on the physical environment. Second, individuals must accept some responsibility for their actions. The extent to which people are aware of the consequences (AC) and ascribe responsibility (AR) to themselves influences how situations are evaluated.

Both AR and AC serve to activate norms. The salience of norms changes as a person’s perception of consequences or responsibility changes and thus influences their decision-making and behavior (Schwartz, 1970b). Past research offers a variety of applications of the model to pro-environmental behavior, including buying products with fewer negative environmental impacts (Heberlein, 1975; Thøgersen, 2006), reusing towels and linens in hotels (Goldstein, Cialdini, & Griskevicius, 2008; Goldstein, Griskevicius, & Cialdini, 2007; Morgan and Chompreeda, 2015), waste reduction (Ebreo, Vining, & Cristancho, 2002–2003; Vining and Ebreo, 2002), recycling (Bagozzi and Dabholkar, 1994; Bratt, 1999; Guagnano, Stern & Dietz, 1995; Hopper & Nielsen, 1991; Schultz & Oskamp, 1996; Thøgersen, 1996, 2006; Vining & Ebreo, 2002), energy conservation (Heberlein, 1975; Midden and Ritsema, 1983; Vining and Ebreo, 2002), littering (Heberlein, 1975), reducing the use of free plastic bags from supermarkets (de Groot, Abrahamse, & Jones, 2013), yard burning (Van Liere & Dunlap, 1978), purchasing carbon emission allowances (Lindman, Ek, & Söderholm, 2013) and using public transportation (Hunecke, Blobaum, Matthies, & Hoyer, 2001; Thøgersen, 2006).

A relationship between situational factors and pro-environmental decision-making might be suspected. How the situation is framed and recognition of alternative possibilities have been shown to predict behavior (Abrahamse, Steg, Gifford, & Vlek, 2009). Despite the effect of situational context and constraints on travel mode choice, norms have a significant impact (Hunecke et al., 2001; Klöckner & Blöbaum, 2010). In the case of public transportation, feelings of guilt (a sense of responsibility) arise from awareness of consequences of the effects of personal car use. Norms about the use of public transportation function as ‘accessible sources of information’ to help guide behavior and make specific pro-environmental norms more salient. Guilt combined with norms about public transportation together effect pro-environmental norms and behavior. Norms are thus significant antecedents to using public transportation (Bamberg, Hunecke, & Blöbaum, 2007).

Salience heightens peoples’ sense of obligation and directly impacts behavior (Schwartz, 1970a). Increased salience, perceived ability to act, and the perceived legitimacy of a pro-social appeal make it harder for people to refuse to act in a pro-social way (Schwartz, 1970a). Alternatively, if salience is low, the appeal is viewed as illegitimate, and/or the ability to act is circumscribed, then the perception of obligation is much lower and can be ignored with few if any personal consequences or feelings of guilt (Schwartz, 1970a). As applied in this article, if travelers face infrastructure challenges in choosing alternative modes of transportation (e.g., no alternatives exist), the situational constraints that circumscribe their ability to act relieve them of their sense of responsibility for the impacts of their choices. Similarly, if travelers’ ecological salience is low, their feelings of obligation to act in pro-environmental ways will be similarly low. If travelers have determined a priori that their environmental impacts are

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