



Analysis

Personal Values, Green Self-identity and Electric Car Adoption

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ARTICLE INFO

Article history:

Received 15 June 2016

Received in revised form 30 March 2017

Accepted 9 May 2017

Available online 14 May 2017

Keywords:

Personal values

Green self-identity

Ecological care

Moral obligation

Electric car adoption

ABSTRACT

Personal values, green self-identity and ethical motives have been widely studied as important, but mostly separate, predictors of pro-environmental behaviors. Scholars call for more research on the combined effects of these variables, to explain pro-environmental behavior. In this regard, this study presents a model of electric car adoption intention, in which personal values determine green self-identity, which in turn influences consumer intention to adopt electric cars directly and also indirectly via ethical motives of ecological care and moral obligation. Second, this work explores how personal values moderate the relationships between green self-identity, ecological care, moral obligation and electric car adoption intention.

Data were collected through a survey in a sample of 2005 car drivers residing in Belgium, Denmark and Italy. Results confirm that four value domains (i.e., self-transcendence, self-enhancement, openness-to-change and conservation) influence green self-identity, which in turn determines consumer intention to adopt electric cars both directly and indirectly via ecological care and moral obligation motivations. Furthermore, consumers who find self-transcendent and openness-to-change values important tend to express their green self-identity directly into intentions and through moral obligation evaluations. Conversely, individuals who find self-enhancement values important express their green self-identity directly into intentions, while they take the ecological and moral considerations to behave green less into account. Finally, consumers who find conservation values important translate their green self-identity less into intentions to adopt electric cars, and tend to consider less the ecological and moral aspects of consumption choices.

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1. Introduction

The transport sector contributes considerably to the development of society and economy. However, it can also harmfully affect human health and the natural environment (European Environment Agency - EEA, 2015a, 2015b). In Europe greenhouse gas (GHG) emissions from transport have increased by 19.4% in the 1990–2013 period, accounting for almost one-quarter of the EU's total GHG emissions. Car transport remains the dominant mode of passenger transport, and passenger cars contribute almost 45% of the transport sector's emissions (EEA, 2015b). A notable proportion of Europe's population live in areas where air pollutant concentrations and road traffic noise levels exceed the EU's recommended standards (EEA, 2015b).

Electro-mobility offers a potential solution to transport related GHG emissions and environmental noise issues, because it combines the advantages of mobility with the reduction of the negative externalities related to it. However, the extent to which electro-mobility can contribute

to actual sustainable outcomes heavily depends on consumer acceptance of this innovation. To gain knowledge on how consumers can be effectively encouraged to adopt electric vehicles is a necessary prerequisite toward a shift to this paradigm (Noppers et al., 2014). While pricing policies and monetary incentives have shown positive short-term effects (Plug in America, 2015), a mid-term evaluation has revealed counterproductive consumer responses. Purchasing behavior returns to baseline levels after the reinforcement is terminated (Oliver and Rosen, 2010), and consumers refrain from adopting eco-friendly alternatives in absence of expected material rewards (Sierczula et al., 2014). Some argue that understanding more fundamental aspects of consumers, such as personal values, identity and ethics, is critical in moving toward more enduring sustainable behaviors (Steg and Vlek, 2009). Hence, policy makers and marketers now focus and call for further research on the use of these variables, to lead consumers to a more sustained adoption of electric vehicles in the market (Skippon and Garwood, 2011).

Personal values, green self-identity and ethical motives are widely acknowledged predictors of pro-environmental behavior. Values – conceptions of desirable end-states that form an integrated system of evaluation (Schwartz, 1992) – are acclaimed determinants of pro-environmental attitudes and actions (Bamberg and Möser, 2007;

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Leonidou et al., 2010). Green self-identity – an individual's overall perceived identification with the typical green consumer – is a well-recognized common motivational root of different eco-friendly behaviors (Whitmarsh and O'Neill, 2010). Ethical evaluations of 'teleology' – a consumer's concern for the environmental consequences of his/her consumption behavior – and 'deontology' – a consumer's intrinsic moral obligation to behave pro-environmentally – are vital parts of consumer pro-environmental behavior prediction in various conceptualizations (Schwartz, 1977; Hunt and Vitell, 1986; Stern et al., 1999). However, while personal values, green self-identity and ethical motives have been analyzed separately for a long time, there is a need for more research on the relationships between these variables, and their combined effects on consumer pro-environmental behavior (Gatersleben et al., 2014).

The current study addresses this issue in the context of eco-friendly electric car adoption. It presents a model of eco-friendly electric car adoption intention, in which personal value domains (Schwartz, 1992) determine green self-identity, which in turn influences consumer intention to adopt electric cars directly and also indirectly through ethical motives of ecological care (teleology) and moral obligation (deontology). Most importantly, this study explores how personal value domains moderate these hypothesized relationships. It posits that the extent to which green self-identity influences consumer intention to adopt eco-friendly electric cars directly and indirectly depends on the importance consumers attach to different personal values as guiding principles in their life. The proposed model is empirically validated in a sample of 2005 car drivers residing in three European countries: Belgium, Denmark and Italy.

The contribution of this work is threefold. First, a number of studies established the link between personal values and eco-friendly behavior on the one hand (De Groot and Steg, 2008; Hansla et al., 2008), and green self-identity and eco-friendly behavior on the other hand (Oliver and Lee, 2010). Among these studies, attempts were made to include also ethical (teleological and deontological) motives into value-based and identity-based intention formation processes (van der Werff et al., 2013; Barbarossa et al., 2015). A related line of research attempted to determine a causal link between personal values and self-identity, where values were supposed to influence pro-environmental behavior indirectly via the mediating role of environmental identity (Verplanken and Holland, 2002; Steg et al., 2014). Finally, taking a different perspective, a more limited number of studies considered personal values as moderators, instead of causal antecedents, of pro-environmental behavioral intention formation models (Vermeir and Verbeke, 2008; Ruiz de Maya et al., 2011). However, very few studies integrated these approaches in a single, holistic model. In this regard, the current work conceives personal values as important determinants of green self-identity, and green self-identity as a direct and indirect (through teleological and deontological motives) antecedent of consumer intention to adopt electric cars. Finally, and most importantly, it conceives personal values as moderators of this intention formation process. The integration of these research angles in a new perspective is the main contribution of this study.

Second, the current study applies the conceptual model to an under-researched, high-involvement, eco-friendly product type: the electric car. Green consumer behavior literature mainly focused on low-involvement products (Shaw and Shiu, 2003; Johe and Bhullar, 2016). More research is needed for high-involvement products, that express and signal more about a consumer identity and status (Skippon and Garwood, 2011; Noppers et al., 2014).

Finally, this study empirically validates the proposed conceptual model in a sample of 2005 car drivers residing in three European countries (Belgium, Denmark and Italy) to enhance the reliability and the external validity of the findings.

First, we provide a brief overview of the conceptual frameworks previously used to predict pro-environmental behavior. Then, we present the conceptual model developed in this study and the related

hypotheses. Next, we describe the method, and present the results of the statistical analyses. Finally, we discuss the results and their implications, and propose directions for future research.

2. Theoretical Background and Hypotheses

2.1. Positioning of the Proposed Conceptual Model

Many studies adopted a value-based approach to green consumer behavior, and considered personal values as the prime antecedents of pro-environmental behavioral intention formation (Schultz and Zelezny, 1999). One of the best known conceptualizations in that respect is the Values-Beliefs-Norms (VBN) Theory (Stern et al., 1999). VBN Theory posits that personal values influence consumers' awareness-of-consequences of consumption behaviors on the environment, which in turn impacts ascription of responsibility and pro-environmental personal norms, which finally influence pro-environmental behavior. Various studies, building on this Theory, focused on the motivational process through which personal values (e.g., self-transcendence, conservation and self-enhancement – Follows and Jobber, 2000; egoistic, altruistic and biospheric values – De Groot and Steg, 2008; universalism, benevolence and power – Hansla et al., 2008) may impact consumer eco-friendly behavioral intentions, via the mediation of ethical motives (e.g., consumers' awareness-of-consequences and subsequent concern for oneself, others and the biosphere, and green beliefs).

A second line of research adopted a self-identity approach to green consumer behavior (Stets and Biga, 2003), and recognized green self-identity as the prime antecedent of pro-environmental behavioral intentions (Whitmarsh and O'Neill, 2010). Based on self-congruity considerations (Sirgy, 1986), these studies assumed that individuals who perceive themselves as green consumers are likely to engage in pro-environmental behavior as a means of their self-identity expression (Shaw and Shiu, 2003; Oliver and Lee, 2010). A number of these studies also focused on the motivational process through which green self-identity impacts consumer intentions to behave eco-friendly. These works, mostly referring to Hunt and Vitell's (1986) Theory of Ethics and Ryan and Deci's (2000) Self-determination Theory, included ethical evaluations of 'teleology' and 'deontology' as mediators of the self-identity-intention relationship (van der Werff et al., 2013; Barbarossa et al., 2015).

A third line of research established a causal link between personal values and self-identity, whereby values determine self-identity, which in turn drives pro-environmental behavior. Verplanken and Holland (2002) found that priming environmental values enhances attention to and the weight of information related to those values, which results in more eco-friendly consumer choices, but only if these values are of primary importance to define an individual self-concept. Similarly, Gatersleben et al. (2014) showed that values influence a consumer's green self-identity, which in turn impacts pro-environmental behavior.

Finally, a fourth line of research considered values as moderators, instead of antecedents, of pro-environmental behavior formation processes. Vermeir and Verbeke (2008), using the Schwartz Value Framework (Schwartz, 1992), investigated how personal values moderate the effects of the Theory of Planned Behavior's (TPB – Ajzen, 1991) variables on consumer intention to purchase sustainable food products. Zhou et al. (2013) used a similar approach in the context of Chinese consumers' intention to buy organic food. Ruiz de Maya et al. (2011) analyzed how Schwartz's cultural values (Schwartz, 1994) moderate the effects of the TPB variables on organic product purchase intention in a sample of consumers residing in eight European countries.

The current study develops a holistic conceptual framework to explain pro-environmental behavioral intentions that attempts to integrate the components of the models discussed above. The comprehensive integration of these research angles in a new, inclusive perspective aims at formulating a more complete view on the interplay between personal values, self-identity and ethical motives, in the

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