

Gaps Between Valuing and Purchasing Green-Technology Products: Product and Gender Differences

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ABSTRACT

Green technology has become an emerging industry to resolve human concerns over energy use, global warming, and sustainable development. At its current stage, people are likely to experience gaps between valuing and purchasing these products. Proponents of green technology may also need to consider the differences between green-technology products so as to produce better product-specific designs and to consider gender differences in designs based on human consideration. Semi-structured interviews with quantitative data collection were conducted with 54 participants in Taiwan. Important findings include: (1) There are positive relations between value and purchase for appliances, but not for vehicles. (2) Value-purchase gaps are strong for both appliances and vehicles. (3) People's rationales for the gaps include multiplicity, ego, development, economy, and pragmatism approaches. (4) People's concerns about multiplicity and pragmatism are stronger for vehicles than for appliances. (5) Females' concern about pragmatism for vehicles is less than males.'

Keywords: Gender, Green Technology, Purchase, Sustainable Consumption, Value

INTRODUCTION

Green technology has become one of the major emerging industries in the world and in Taiwan for effective energy use and sustainable development, partly in line with the concern over global warming (Stocker, Field, Qin, Barros, Plattner, Tignor et al., 2010; MEPO Humanity Technology Inc., 2009). Despite positive values placed on green-technology products, the act of purchasing these products comprises salient complex decision making processes and gaps

between values and behaviors even for green consumers (Young, Hwang, McDonald, & Oates, 2010). What underlies the gaps may be the complex interaction between humans and technologies.

The aim of this study is to investigate human perceptions of the emerging green-technology products in terms of the gaps between value and purchase and the rationales for the gaps. A special focus is placed on different green-technology products (household appliances and vehicles) and relationship with different genders (females and males). This study is conducted in Taiwan, a society in which

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technology has long been widely and highly developed to improve human material lives; but now people and the government are beginning to reflect on a different future, which aims for a low carbon society and sustainable development, as indicated by the *Sustainable Energy Policy Guidelines* (2008) recently launched by the government in Taiwan. Given the emerging actions taken in the development of green technology and the complex issues underlying technology-human interactions, it is important to understand the meaning that people attach to the related products using both qualitative and quantitative methodologies (Keirstead, 2006). The major methodology used in this study, therefore, is interview and qualitative data analysis combined with quantitative data collection and analysis.

Relationships Between Green (or Pro-Environmental) Value and Behavior

Green or pro-environmental values have long been identified as one of the major factors in relation to the behavior of purchasing green-technology products (Kahn, 2007; Young et al., 2010). Green or pro-environmental values have positive relations with pro-environmental behaviors, e.g., conserving energy, reducing car use, and accepting an increase in fuel tax (Eriksson, Garvill, & Nordlund, 2006; Nordlund & Garvill, 2002; Scherbaum & Popovich, 2008).

The relation between value and behavior, however, may be partially subject to intervention by knowledge concerns in the context, such as heuristic and accessible cues. For example, a physical high temperature and the expectation of a large temperature rise in the future will increase the willingness to pay to reduce global warming (Joireman, Truelove, & Duell, 2010). Furthermore, actual household energy use is largely related to large house size and high income, even though green values may still play a role in reducing household energy use (Gatersleben, Steg, & Vlek, 2002). Acceptance of an increase in fuel tax is subject to concerns with fairness and morality (Eriksson et al.,

2006). These results suggest that there are gaps between green value and behavior despite their consistent positive relations.

Green-Technology Product Differences in Regard to Environmental and Technological Issues

Past research has focused on diverse green-technology products, e.g., food, vehicles, appliances, and electricity tariffs (McDonald, Oates, Thyne, Alevizou, & McMorland, 2009; Young et al., 2010). This study focuses on green-technology products that people can choose to purchase as part of household property. Such products can be placed into two major categories: appliances (including electric devices such as fridges, computers, and electric lights, and other devices which incorporate the use of energy such as taps and toilets) and vehicles (including cars and motorcycles).

People appear to show slightly different concerns in their purchase of different kinds of green-technology products. When purchasing green-technology appliances, people may consider their environmental performance, ethical record, price, availability, energy efficiency, locality, and brand (McDonald et al., 2009). When purchasing vehicles, people may consider factors such as price, innovation, preference, reliability, safety, and network (e.g., charging stations and services) (Caulfield, Farrell, & McMahan, 2010; Eggers & Eggers, 2011).

Gender Differences in Regard to Environmental and Technological Issues

Gender differences in attitudes and behavior towards environmental and technological issues are well documented. Females consistently have slightly higher pro-environmental attitudes than males (Koger & Winter, 2010). Females also tend to assume more environmental responsibility than males, which may be because females place more emphasis on the future and human existence while males place more on risk tak-

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