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Who pays more (or less) for pro-environmental consumer goods? Using the auction method to assess actual willingness-to-pay

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ABSTRACT

The purpose of this study was to measure consumers' actual willingness-to-pay (WTP) for pro-environmental (PE) and non-PE products through a controlled experimental auction. Ninety-eight individuals from the Northeastern U.S. participated in an auction and were segmented into groups based on whether they would pay a) more, b) about the same, or c) less for a PE product compared to an equivalent non-PE product. Demographic and psychological group profiles were comprised based on perceived product benefits, values, consequences of purchase behavior and demographics. Findings showed the majority of consumers would not pay more for PE offerings, suggesting that they may not view PE products as "normal." Implications for shaping PE behavior of this neutral majority are addressed. Further, the need for researchers to collect actual behavioral data is emphasized, as this is of paramount importance in the environmental domain due to the well-known "action gap" between intentions and behavior.

1. Introduction

According to the Organization for Economic Co-operation and Development (OECD, 2008), consumer choice behavior is crucial to urging sustainable production and plays an essential role in pro-environmental (PE) development. It explains that most government policies focus on curtailing the environmental impact of unsustainable industrial production, primarily through regulations and taxes. Yet, promoting sustainable consumption is equally important to limit negative environmental and social externalities as well as to provide markets for sustainable products (OECD, 2008).

In this study, we examine PE consumption within the general context of pro-environmental behavior. PE behavior is most commonly defined as intentionally minimizing the negative impact that an action can have on the environment (Kollmuss & Agyeman, 2002). It has been operationalized in several ways, including daily environmental behavior (Tindall, Davies, & Mauboules, 2003), conservation behavior (Monroe, 2003; Poortinga, Steg, & Vlek, 2004; Schultz, Oskamp, & Mainieri, 1995) and household consumption (Gatersleben, Steg, & Vlek, 2002). Across all three operationalizations, efforts to motivate people to believe in the importance of PE behavior have been fairly successful. However, converting people to incorporate these stated beliefs into their daily behaviors has been much more challenging (Bang, Ellinger, Hadjimarcou, & Trailhal, 2000; Laroche, Bergeron, & Barbaro-Forleo, 2001; Ottman, Stafford, & Hartman, 2006).

Research concerning attitudes in this domain appears to be following a similar path as stated beliefs. Attitudes are heavily relied on to predict intentions, which then are used to predict behavior. These relationships are outlined in the well-established theory of reasoned action (TRA) (Ajzen & Fishbein, 1980) and the more recent and extended theory of planned behavior (TPB) (Ajzen, 1991). The first part of the TPB pertaining to the attitude–intention relationship appears to be strongly supported by many fields of research (Chan, Wu, & Hung, 2010; Fielding, McDonald, & Louis, 2008; Greaves, Zibarras, & Stride, 2013; Roseman, Hoon Kim, & Zhang, 2013; Walsh, Shiu, & Hassan, 2012). However, the intention–behavior relationship has received much less support, especially in the environmental domain.

This gap between attitudes, intentions, and behavior has been referred to as the "action gap" for general consumer research (Godin, Conner, & Sheeran, 2005) and for environmental consumer research (Blake, 1999; Kennedy, Beckley, McFarlane, & Nadeau, 2009; Kollmuss & Agyeman, 2002; Niessen & Hamm, 2008;

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Vermeir & Verbeke, 2006). The most common explanations for this action gap are the perceived quality of PE products and the higher price that these products usually command (Bazoche, Deola, & Soler, 2008; Bennett & Williams, 2011; D'Souza, Taghian, & Khosla, 2007; Loureiro, 2003; Ottman et al., 2006).

Because of this action gap, the importance of capturing behavioral data is paramount, especially for products that entail a normative component, such as PE products. This is because PE offerings tend to be viewed as the socially acceptable choice, which may lead to inflated purchase intentions relative to actual purchase behavior (Roozen & De Pelsmacker, 1998). However, behavioral measures often fall short, as many studies use self-reported behavior or do not distinguish behavior from behavioral intentions. For example, although Thøgersen (2002) measured behavior concerning organic and non-organic wine, essentially only behavioral intentions were measured. Harland, Staats, and Wilke (1999) studied self-reported behavior for five different PE behaviors (including turning off the faucet while brushing one's teeth, purchasing energy-saving light bulbs, and using other forms of transportation than the car). Schultz et al. (2005) measured self-reported behavior (including purchasing products in reusable containers, composting food scraps, and picking up litter) for a year among six different countries. Similarly, segmentation studies by commercial marketing research firms have also used hypothetical behavior (Grail Research, 2009) and attitudinal and self-reported behavioral measures (Cotton Inc., 2010) to segment PE consumers. While studies such as these rely on individuals' self-reported behaviors, it is important to reiterate that what people "say" may not necessarily represent what they do (Horowitz, McConnell, & Murphy, 2008; Murphy & Stevens, 2004).

Thus, obtaining actual behavioral data is essential to those interested in changing behaviors that entail a normative component—so that they may understand certain drivers of behavior rather than stated behavioral intentions or self-reported behavior. Therefore, the purpose of this research is to examine – in an actual consumption context – what drives people to actually pay more for PE products compared to non-PE products. We look at these drivers in terms of product benefits, values, perceived consequences of purchase behavior, and demographics. Specifically, we consider those consumer goods produced in an environmentally friendly manner as PE products, and those as conventionally produced as non-PE products. Using a more specific context such as this allows us to uniquely focus on this behavior and test willingness-to-pay (WTP) behavior in a controlled context. [It should be noted that WTP data may be hypothetical in nature (such as with the contingent valuation method whereby consumers are simply asked to state how much they would pay). It may alternatively be non-hypothetical, requiring some form of economic commitment from participants. In this research, "actual" WTP refers to the non-hypothetical version of WTP.]

Further, as one of the biggest hindrances to purchasing PE products is the higher price they usually entail (Bazoche et al., 2008; Grail Research, 2009; Loureiro, 2003), it is important to understand who will actually pay more. By finding out who will pay more for PE compared to non-PE consumer goods, we may be able to shed light on how other stakeholders may encourage positive changes in general PE behavior in non-consumption domains (such as recycling, using public transportation, etc.).

2. Study objectives

Steg and Vlek (2009) assert that environmental psychologists need to participate in the management of environmental problems by supporting behavioral change. They outlined several issues to consider in this process, including identifying the behavior to change, examining critical factors underlying this behavior, and suggesting corrective action to influence the change in and the determinants of the behavior. Based on these suggestions and in light of the environmental action gap between intentions and behavior, the two main objectives of this research are as follows:

- The *first objective* is to use a backward or behavioral segmentation approach (described in the following section) to cluster consumers using the price one will actually pay to purchase a PE product as opposed to a non-PE product. Data is collected through a controlled auction experiment.

- The *second objective* is to profile each of these segments according to a) product benefits sought b) values c) perceived consequences of purchase behavior, and d) demographics based on self-reported survey data.

To accomplish these objectives, a survey was administered first, followed shortly after by an auction experiment that assessed actual behavior. As a result, the experiment is described first to establish the actual behavior segments (objective #1), followed by the survey data which was used to profiled within each of the resulting segments (objective #2).

2.1. The first objective – backward segmentation

Regarding the first objective, Bennett and Williams (2011) argue that there needs to be a serious shift in theoretical thinking. Rather than spending countless resources (time, money, etc.) changing the intention-behavior connection, there needs to be a focus on shaping (or changing) behavior, which in turn may shape values and attitudes (Smith & Mackie, 2007; Van Veen, Krug, Schooler, & Carter, 2009). Their argument supports a "backward" approach to market segmentation that begins with actual behaviors and is counter to the more common "forward" approach that often begins with attitudes and is most commonly used by researchers (Andrews & Currim, 2003).

The forward segmentation approach segments consumers by characteristics, such as values and attitudes, and then discriminates by product selection behaviors. However, given the action gap between intentions and behavior in the PE domain, starting with behavior makes more sense. Unlike attitudes (that are difficult to measure validly and reliably), behaviors can be directly observed, thus segmenting by behaviors in a research setting is likely to result in segments that mirror the actual population. Hence, the backward approach involves grouping consumers' responses based on their similarity in choice of products, services, and other activities (e.g. recycling), and is followed by discriminating these groups by consumer characteristics, such as demographics, values, and attitudes (Wedel & Kamakura, 2000). In summary, this approach looks at what people actually do first, groups them accordingly, and then deconstructs these groups to understand what similarities exist within groups, and what differences exist between groups. This approach is similar to the one taken by Clark, Kotchen, and Moore (2003), who compared participants and non-participants in a premium-priced, green electricity program.

For a measure of backward segmentation in this research, we consider the difference between actual purchase behavior for a conventionally produced product and for a PE produced product. If some individuals are willing to pay more (or less) for a PE product, then they can be profiled based on this behavior to see which characteristics may be driving them to pay more (or less) for these products. Therefore, using the difference in the price premium (or discount) one will pay for a PE product compared to a non-PE product may be a valuable measure for segmenting consumers.