

CONSUMERS' VALUE ORIENTATIONS AND GREEN ADVERTISING
EFFECTIVENESS: THE MODERATING ROLE OF PUBLIC SELF-AWARENESS

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DISSERTATION ABSTRACT

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Title: Consumers' Value Orientations and Green Advertising Effectiveness: The Moderating Role of Public Self-Awareness

As consumers seek social status through displays of mindful consumption, it becomes common to observe a new type of environmentally responsible but conspicuous behavior called conspicuous conservation. Intentionally engaging in environmental activities to show off your 'greenness' or over-spending on green products to display your ability to support environmental causes is an example of conspicuous conservation. Given the recent consumer trend involved in green consumption, the study begins with the question of whether consumers' value orientations explain their environmentally conscious behaviors, including their responses to environmental claims in advertising and intentions to purchase a green product. Based on theoretical premises, the study hypothesizes that consumers driven by self-enhancement (proself) values are more likely to respond to a green product whose consumption is primarily seen in public, promoting strong public self-awareness, rather than a product whose consumption is mainly in private and proself-oriented consumers are more likely to respond to green claims that bring immediate benefits than distant and uncertain benefits to the environment.

The results of the online experiment confirm that there is a main effect of social value orientations on consumers' environmentally conscious behavior, including attitudinal and behavioral responses regarding green advertising and green products. Specifically, public self-awareness is a significant moderator, indicating proself-oriented consumers generally show less favorable attitude and behavioral responses with regard to green advertising and green purchase than prosocial-oriented consumers; however, when an advertised product and its consumption is mainly seen in public, promoting strong public self-awareness, proself-oriented consumers change their attitudes and behavioral responses in a positive direction.

The study has several contributions to the current stream of environmental advertising research and practice. First, the study establishes the relationship between social value orientations and green advertising effectiveness. Second, the study identifies that conspicuous conservation can be explained with social value orientations and public self-awareness. Last, the finding of the study suggests that social value orientations help marketers understand the consumers' underlying motivations and to know whether greenness is an appropriate selling attribute. Further, the marketers can understand how the consumers' value orientations could be incorporated into the brand communications.

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CHAPTER I

INTRODUCTION

Background

A recent discussion in the *New York Times* regarding the remarkable success of the Prius in the U.S. hybrid car market was interesting (Maynard, 2007). According to the article, 57 percent of Prius owners said that the major reason they purchased a Prius was that it makes a statement about the owner. The *New York Times* quoted an interview with Joy Feasley, owner of a 2006 Prius, who said, “I really want people to know that I care about the environment.”

In 2010, Toyota Prius controlled more than half the market for hybrid automobiles, according to the U.S. Department of Energy (Shea, 2010). Known as the “Prius Halo,” this success was explained with a theoretical standpoint (Sexton & Sexton, 2011). The Prius is a comfortable, well-built hybrid car, as are the hybrid versions of the Camry and the Honda Civic. However, the Prius well surpasses them in the marketplace (Blanchard, 2011). What makes the Prius so unique and successful? What does the Prius have that other competitors do not? The answer is what economists call signaling (Griskevicius, Tybur, & Van Den Bergh, 2010; Sexton & Sexton, 2012). Hybrid Camrys and Civics look similar to their conventional counterparts, with the exception of a badge attached to the rear of the vehicles, indicating they are a hybrid, but a Prius is in a class by itself (Blanchard, 2011). The car does not look like any other car, providing a unique and powerful signal of the owner’s affinity for the environment and telling everyone that the owner is part of the solution, not part of the problem (Blanchard, 2011).

Traditionally, consumers' environmental behaviors, from carrying a grocery bag to commuting to work by bicycle, have been considered self-sacrifice and prosocial behaviors for the benefit of the environment. However, as environmental issues are garnering public attention, as the society requires individuals' austerity rather than ostentation for the benefit of the environment, as consumers seek social status and reputation through displays of mindful consumption, and as consumers' motivations to purchase environmentally friendly products become multifaceted, it becomes common to observe a new type of environmentally responsible but conspicuous behavior called conspicuous conservation (Sexton & Sexton, 2012). Conspicuous conservation is defined as an environmental behavior and choice wherein the conservation of energy, water, or other essential resources is undertaken in a manner optimized for public exhibition (Griskevicius et al., 2010; Sexton & Sexton, 2012). As the Prius story indicated, intentionally engaging in environmental friendly activities to show off your 'greenness' or over-spending on environmentally friendly products to display your ability to support environmental causes is an example of conspicuous conservation. This type of environmental behaviors, as known as conspicuous conservation, cannot be explained with conventional prosocial behavior theories (Andreoni, 1990).

Purpose of the Study

The purpose of the study was to explore whether consumers' environmentally conscious behaviors, including green products purchase, are driven purely by prosocial values to help the environment, or driven by proself values to signal to others that a person is environmentally conscious to gain social rewards and reputation. To explain consumers' environmental behavior, specifically green product purchase, with a

theoretical standpoint, the study incorporated the concept of social value orientations.

Social value orientation has been traditionally studied to explain a social conflict between the collective interest of society and the individual interests of its members in a context of social dilemma (Milfont & Gouveia, 2006). Social dilemmas are situations in which members of a group face a choice either to cooperate in order to maximize group gain or to defect for self-interest (Messick & Brewer, 1983). Social value orientations helps categorize individuals as prosocials and proselfs based on individual preferences for distribution outcomes to self and others (Dawes, 1980; Milfont & Gouveia, 2006). For example, prosocials try to maximize both joint outcomes and equality in outcomes. On the other hand, proselfs try to maximize their own outcomes with little or no consideration about other's outcome (McClintock & Messick, 1986; Messick & McClintock, 1968). The concept of social value orientations is especially useful when explaining individual's environmental behavior because environmental issues are often understood as one of social dilemmas because they represent a conflict between the collective interest of society (prosocials) and the individual interests of its members (proselfs) (Dawes, 1980).

Evidence suggested that a growing number of consumers in the U.S. are becoming more environmentally conscious (Mostafa, 2007; Stone, Barnes, & Montgomery, 1995). A nationwide survey conducted by American Demographics indicated that 87 percent of American adults say that they are "concerned" about the environment (Gardyn, 2003). However, while some studies have found that despite expressing concerns towards the environment, consumers are reluctant to pay a premium for environmentally friendly products (Ottman, 1992; RoperASW, 2002), some studies

have observed that consumers are increasingly willing to pay higher prices for environmentally friendly products and to rely on their purchase decision on environmental-related issues (Leonidou, Leonidou, & Kvasova, 2010). As the mixed and inconsistent results indicate, environmental attitude, as a single predictor, is not sufficient to explain consumers' environmentally conscious behaviors (Gupta & Ogden, 2009). Although environmental attitude has been received academic attention as a major predictor of consumers' environmental-related behaviors, little empirical evidence exists to support that pro-environmental attitude translate into environmentally conscious behaviors. Given the pessimistic view of the usefulness of environmental attitude as a single predictor of consumers' environmental behavior, the present study assumed that the concept of social value orientation is a more reliable predictor to explain consumers' environmentally conscious behaviors, especially green purchase behaviors.

The study begins with the question of whether consumers' value orientations predict their environmentally conscious behaviors, including their attitudinal responses to green product advertising and their behavioral intentions to purchase a product. Specifically, the study looks at how consumers' seemingly opposing value orientations, namely self-transcendence (prosocial) and self-enhancement (proself), differently affect their responses to environmental claims in green advertising and intentions to purchase a green product. The effect of social value orientations on consumers' environmentally responsible consumption, however, is expected to be moderated by two factors: public self-awareness and distance of benefits to the environment. Public self-awareness indicates individual's degree of awareness of their actions being evaluated by others in public (White & Peloza, 2009). Distance of benefit to the environment refers to

individual's expectation of when their environmentally conscious actions bring actual benefits to the environment (Chandran & Menon, 2004; Kim, Zhang, & Li, 2008).

Based on the theoretical premise, the study posits that consumers who are driven by self-enhancement (proself) values are more likely to use a green product whose consumption is primarily seen by others in public, promoting strong public self-awareness, rather than a green product whose consumption is mainly in private, generating low public self-awareness. Additionally, consumers driven by self-enhancement (proself) values are more likely to respond to green claims that bring immediate and apparent benefits to the environment rather than distant and uncertain benefits to the environment. Consumers who are driven by self-transcendence (prosocial) values, on the contrary, are favorable to green advertising and a green product, regardless of level of public self-awareness and regardless of benefit distance of environmental claims. Further, the study emphasizes the underlying role of consumers' skepticism toward claims in green advertising that explains consumers' environmentally conscious behaviors, including attitudes toward green advertising, green products, and green purchase intentions.

Significance of the Study

The study makes significant contributions to the current stream of consumer research and environmental communication research. First, the study incorporates the concept of social value orientations to explain consumers' environmental behaviors, specifically, responses to green advertising and intentions to purchase green products. Although a great deal of previous literature in consumer research has focused on environmental attitude to explain consumers' environmental behaviors, the study points

out that environmental attitude has several conceptual and methodological flaws as a causal predictor of environmental behaviors. Hence, the study suggests that value orientations are considered as a reliable predictor, especially in the context of environmental domain, to explain self-transcendent (prosocial) and self-enhancement (proself) behaviors. Second, the study extends previous research by demonstrating the importance of green message framing to further improve communications with consumers to promote green product purchases. While previous literature that has dealt with message framing merely focused on its effects on attitudinal and behavioral consequences, the present study specifically looks at the relationship between consumers' value orientations and how seemingly opposing value orientations differently affect consumers' responses to green messages framed in different directions and further their attitudinal and behavioral responses to green purchase behavior.

The study has several practical contributions to the related field. First, the study is expected to contribute theory-based insights to explain consumers' conspicuous environmental behaviors. Unlike altruism-driven environmental behaviors, conspicuous conservation presumably driven by self-interest is hard to explained with conventional prosocial theory. Hence, the study incorporates several conceptual frameworks, including public self-awareness and temporal benefit distance based on the costly signaling theory, competitive altruism, and social dilemmas, to explain conspicuous conservation. Second, the present study empirically examines the effects of consumers' skepticism toward green claims on green advertising effectiveness. In previous literature, the concept of advertising skepticism has been mostly studied as consumer skepticism toward advertising messages in general not specifically toward green advertising

messages. As greenwashing and misuses of green marketing practices have received much of public attention, it is significant to look at consumer skepticism specifically toward green claims in advertising and its consequences on attitudinal and behavioral responses to green advertising and green consumption. Finally, the study will contribute research-based insights to other social and sustainable campaigns in which participants' prosocial and altruistic behaviors are essential to succeed, such as charitable support, curbside recycling programs, or energy conservation.

CHAPTER II

LITERATURE REVIEW

Chapter II provides reviews of research areas in social psychology, consumer behavior, and persuasive communications to theoretically explain consumers' environmental behaviors. The chapter begins with a conceptual definition of consumers' environmental behavior. Then, the study reviews relevant literature that explains dispositional, situational, and attitudinal predictors of consumers' environmental behaviors. The study specifically examines the relationship between consumers' social value orientations and their responses to green advertising and green product purchase behaviors. After reviewing determinants of consumers' environmental behaviors, theoretical frameworks that are relevant to the main research question are discussed. Then, the recent trend of sustainable marketing practices, green advertising, green message framing, greenwashing, and consumer's skepticism toward green claims are reviewed from an academic and practical standpoint. The chapter concludes with proposed hypotheses with a summary of literature review.

Environmental Behavior

Major environmental problems such as climate change, pollution, the depletion of natural resources, and population growth have challenged the way people live. Ironically, most environmental problems are caused by the way people live. Humans are continually damaging the environment while seeking solutions to prevent or reduce the impacts of environmental problems. Research in social psychology and consumer research in an environmental domain, driven by a growing concern for the environment,

have attempted to find ways to change people's behavior to reverse environmental problems while preserving human well-being and quality of life. Given a growing concern about environmental issues, there have been academic attempts to identify pro-environmental behavior and situational and individual determinants that explain pro-environmental behavior. Kollmus and Agyeman (2002) have defined pro-environmental behavior as "behavior that consciously seeks to minimize the negative impact of one's actions on the natural and built world" (p. 240). Similar terms used for pro-environmental behavior are environmentally friendly behavior, environmentally conscious behavior, environmentally responsible behavior, environmentally significant behavior, and ecological behavior.

Multidimensional Nature of Environmental Behavior

Scholars have attempted to develop reliable measures of environmental behavior. Despite their numerous efforts, many of the scholars' measures seem inconsistent, as early research presumed pro-environmental behaviors to be a unitary concept (Haanpää, 2007; Stern, 2000). More recently, it has become a general consensus among scholars that environmental behavior is not a unitary but a multidimensional concept (Cleveland, Kalamas, & Laroche, 2005; Gatersleben, Steg, & Vlek, 2002; Stern, 2005). These studies suggested that it is not valid to cluster a range of different environmental behaviors along one dimension because these behaviors are not necessarily correlated. For instance, when someone chooses not to drive a car, this does not necessarily mean that he or she also donates money to environmental civic groups. People do not appear to behave environmentally consistent across different domains. At times, even the same motivational goals promote different behaviors (McKenzie-Mohr, Nemiroff, Beers, &

Desmarais, 1995). For example, the same motivational goal may motivate one person to buy organic food, another to donate to charity, and yet another to use public transportation. At times, pro-environmental behaviors do not correlate reliably within domains or across different domains. Further, engagement in one pro-environmental behavior does not necessarily lead to participation in another (Thøgersen & Ölander, 2002). Hence, it is worth focusing on one type of behavior under a specific domain.

Stern (2005) divided pro-environmental behaviors into two categories: those in a public sphere and those in a private sphere. The support of public policies that are beneficial to environmental systems is an example of a public-sphere behavior. Although this behavior affects the environment only indirectly by influencing public policies, the effects may be significant, as public policies can change the behaviors of many people and organizations at once. Private-sphere pro-environmental behaviors include the purchase of major personal goods and services that have environmental impact in their manufacture or use, such as high fuel-efficient automobiles, energy-efficient home heating/cooling systems, recycled, biodegradable products, and organically grown foods. Private-sphere behaviors are unlike those of the public sphere in that private-sphere behaviors have direct environmental consequences. Although the environmental impact of any individual's personal behavior is small, such individual behaviors have an environmentally significant impact in the aggregate when many people perform the same action. The present study aims to focus on examining consumers' pro-environmental behaviors in the private sphere, specifically, consumers' purchase of environmentally friendly products. Next, research in consumers' environmental behaviors and reviews of established theories applied to the particular context are discussed.

Environmentally Conscious Consumers

In recent years, pro-environmental behaviors among consumers have risen dramatically as demonstrated by increasing: (a) involvement in environmental activities such as saving energy, recycling packages, or using public transportation; and (b) a willingness to pay higher prices for environmentally friendly products and to rely on their purchase decision on environmental-related issues (Leonidou et al., 2010). As the issue of environmental deterioration has become prevalent and environmental concerns and awareness among consumers has rapidly grown, a new market segment, environmentally conscious consumers, has been widely acknowledged by both marketing practitioners and academic scholars (Leonidou et al., 2010; Mostafa, 2007; Gardyn, 2003). Evidence suggests that a growing number of consumers in the U.S. are becoming more environmentally conscious in terms of their lifestyles (Mostafa, 2007; Stone, Barnes, & Montgomery, 1995). According to a nationwide survey by American Demographic revealed that 87 percent of American consumers said they are concerned about the environment and when they shop, whether or not a product is safe for the environment influences their decision to buy the product (Gardyn, 2003). As the results indicate, environmental consciousness is not only an ideology of environmentalism, but also a matter of market competition (McCloskey & Maddock, 1994). Marketers and scholars have made numerous attempts to identify this specific group of consumers and build a theoretical model to predict determinants of their behaviors to deliver effective communication messages and derive green purchase commitments (Banerjee, Gulas, & Iyer, 1995).

To date, the notion of green consumers has been primarily studied in a context of

social marketing. In the initial stage of research, green consumerism was viewed as a specific type of socially conscious (Anderson & Cunningham, 1972) or socially responsible consumer behavior (Antil, 1984; Scheffer, 1991). Anderson and Cunningham were the first researchers to investigate the notion of a socially conscious consumer from a marketing perspective. An early definition described a socially conscious consumer as a consumer who takes into account the social and environmental consequences in purchasing products (Anderson & Cunningham, 1972; Webster, 1975). Although the term “socially conscious consumer” seems to describe only consumers’ social consciousness, the definition should take into account environmental consciousness, as well. In a broad sense, either a socially conscious consumer or an environmentally conscious consumer characteristically deals with the social consequences of his or her consumption and attempts to use his or her purchasing power to bring about social change (Webster, 1975). Soon after the concept of socially conscious consumers was recognized, Henion (1976) and Kinnear, Taylor, and Ahmed (1974) introduced the definition of environmentally conscious consumers as people whose behavior reflects a relatively consistent and conscious concern for the environmental impacts related to the purchase, ownership, use, or disposal of particular products or services (Moisander, 2007; Robert, 1996).

Determinants of Environmentally Conscious Consumer Behavior

To date, researchers in consumer behavior and environmental psychology have made an effort to establish a solid theoretical model to predict consumers’ pro-environmental behaviors, using demographic, socioeconomic, and personality, as well as attitudinal variables (Schwepker & Cornwell, 1991; Stern, 2000). Stern suggested four

categories of variables to explain environmentally significant consumer behaviors: (a) personal capabilities, (b) habits or routines, (c) situational factors, and (d) attitudinal factors.

Personal capabilities. The first type of determinant is personal capability. Personal capabilities are typically known as demographics. Knowledge and skills required for particular actions, socioeconomics such as income, occupation, education, literacy, and social status also are indicators of personal capabilities (Diamantopoulos, Schlegelmilch, Sinkovics, & Bohlen, 2003). Initial efforts to study correlates of green consumer behaviors typically focused on demographic and socioeconomic variables such as age, gender, income, marital status, and education. Anderson and Cunningham (1972) predicted an individual's level of social responsibility based on demographic and psychological characteristics; Kinnear et al. (1974) explored the relationship of personality and socioeconomic status with consumers' environmental concern; and Murphy, Kangun, and Locander (1978) included a race variable to predict environmental consciousness. General consensus among researchers who have utilized demographic and socioeconomic attributes to predict consumers' environmentally conscious behavior is that the environmentally conscious consumers, compared to conventional consumers, tend to be white, better educated, higher in income, occupational, younger and politically liberal (Anderson & Cunningham, 1972; Kinnear et al., 1974; Leonidou et al., 2010; Murphy et al., 1978; Schepker & Cornwell, 1991; Van Liere & Dunlap, 1981).

Habits or routines. A second type of determinant is a habit or routines. Many behaviors in the environmental domain that are not beneficial to the environment appear to be habitual behaviors, such as keeping the light or television on when leaving the

room, driving short distances instead of walking or using public transportation, and throwing away recyclables. A set of predictors that are applied to explain these habitual behaviors differ from those variables that explain deliberate, cautious behaviors such as buying a hybrid vehicle or installing a home insulating system (Klößner & Matthies, 2004). Habitual behaviors can be characterized by four variables: frequency, stability, success, and automaticity (Steg et al., 2012). Every time a behavior is successfully performed under stable circumstances (i.e., when the behavior leads to the intended outcomes), the likelihood increases that the behavior is automatically repeated the next time the situation is encountered (Steg et al., 2012; Verplanken, Aarts, van Knippenberg, & Moonen, 1998). The first time the behavior is performed, psychological variables such as attitudes, intentions, norms, and/or values are strong predictors. However, the more often the behavior is repeated, the stronger the influence of habit becomes. Habits are usually considered barriers against pro-environmental behavior, which interferes with environmentally conscious intentions or personal obligations. For example, even if there is an intention to use public transportation more often, the previous habit of using a car for daily trips decreases the likelihood of using public transportation.

Situational factors. A third type of determinant to explain pro-environmental behavior is situational factors (also known as contextual factors), such as social influence, government regulations, physical convenience, and perceived cost and benefits. Among the situational factors, social influence has been considered a reliable predictor of consumers' environmental behaviors (Hartmann & Apaolaza-Ibanez, 2011; Schultz, Nolan, Cialdini, Goldstein, & Griskevicius, 2007; Welte & Anastasio, 2009). Like most human behaviors, consumers' environmental behaviors exist in a social context where

certain social norms exist. Social influence is driven mainly by social norms that “guide and/or constrain human behavior without the force of laws” (Cialdini & Trost, 1998, p. 52). Individuals respond to cues about behavior choice based upon observing others’ behaviors and how one believes particular behaviors would be viewed by others (Keizer & Schultz, 2012). Social influence can be explained in the context of the social cognitive theory that basically suggests that an individual’s behavioral choice is directly related to observing others within the context of social interaction, experiences, and other social influences (Bandura, 2009). Social influence results largely from categorizing oneself as a member of a specific group and then adopting the attitude and behaviors that are shared by the other members of the group (Hogg, 2003). Conforming social norms is often associated with social acceptance or rewards, whereas violating social norms often entails disapproval and social sanctions. People conform to norms to gain social approval or to avoid social sanctions (Keizer & Schultz, 2012).

Recent research promotes the idea of social norms as primary determinants for explaining consumer behaviors in the environmental domain. Biel and Thøgersen (2007) suggested that a social norm that promotes one’s helping behavior is likely to be activated when seeing others’ cooperative behaviors. A cooperative behavior shown by others is likely to reciprocally influence an individual’s willingness to adopt a cooperative behavior. A usage of public transportation is an example of representing the role of social norms as a determinant of pro-environmental behaviors (Bamberg, Hunecke, & Blobaum, 2007). The rate of public transportation usage is likely to be increased when a surrounding social context, for example, community members’ awareness of negative consequences caused by one’s own car use, creates strong social norms, such as feelings

of guilt and perceptions of social sanctions, when using a car (Bamberg et al., 2007).

Social norms have been found to have an influence on pro-environmental behavior in a private situation, as well. A conservation behavior, for example, reusing a towel when staying in a hotel, is likely to be enhanced when seeing a card displayed in a towel rack that indicates that other guests who previously stayed in the room have participated in the towel reuse program (Goldstein, Cialdini, & Griskevicius, 2008). Social norms, learned from significant others, such as peer groups (Griskevicius, Cialdini, & Goldstein, 2008; Lee & Holden, 1999) and parents (Matthies et al., 2012), promote green consciousness and pro-environmental behaviors, such as local environmental involvement, green purchase behavior (Kollmuss & Agyeman, 2002; Lee & Holden, 1999), and participation to recycling (Matthies, Selge, & Klockner, 2012; Vining & Ebreo, 1990, 1992). Individuals' significant peer networks and parental guidance might suggest, cultivate, and reinforce a social norm of green consciousness and pro-environmental behaviors, which also can be explained with the consumer socialization theory. The consumer socialization theory helps to explain the role of a socialization agent (Ward, 1974), a significant influencer such as parents, friends, or other significant others in the persuasion process (Ward, 1974). Consumers observe, learn, and follow the norm in their social circles to acquire social approval and acceptance by other society members (Keizer & Schultz, 2012; Moschis & Churchill, 1978).

Attitudinal factors. The last type of determinant, according to Stern's (2000) categorization, is attitudinal factors. Attitudinal factors comprise attitudes, motivations, and personality traits, including personal norms, values, and locus of control. Compared

to other determinants such as demographic, socioeconomic, and situational factors, attitudinal factors have been extensively used to explain consumers' environmental behaviors (Jansson, 2011; Kaiser, Wolfing, & Fuhrer, 1999; Milfont & Duckitt, 2010; Newhouse, 1990). Among attitudinal factors, environmental attitude is most frequently studied as a predictor of environmental behaviors (Kaiser et al., 1999; Milfont & Duckitt, 2010). Almost two-thirds of all environmental psychology publications from the 1960s to the 1990s included environmental attitudes as one of the major determinant when discussing individual environmental behaviors (Steg & Nordlund, 2012).

Attitude is defined as “an enduring set of beliefs about an object that predispose people to behave in particular ways toward the object” (Weigel, 1983, p. 257). As the definition implies, it is theoretically expected that people with an attitude toward a certain object will act in ways consistent with that attitude. Environmental attitudes have been conceptualized, based on the attitude theory, as being composed of beliefs that a person holds regarding environmentally related activities or issues (Heberlein, 1981; Schultz, Shriver, Tabanico, & Khazian, 2004). Attitude theorists agree that attitudes have an object. A person has an attitude about something. The great difficulty in conceptualizing “environmental attitudes, however, is the ambiguity of the object itself” (Heberlein, 1981, p. 243). Relative to this last point, one fundamental question is whether the environment should be considered an object. The environment as an object is difficult to define because attitude cannot be formed toward the environment as a whole, but rather attitude can be formed toward separate aspects of the environment, such as air pollution, global warming, wildlife protection, or alternative energy development (Heberlein, 1981). Asking opinions if individual have positive or negative attitudes toward wildlife

protection sounds reasonable. Yet, asking if they like or dislike the environment seems much more ambiguous.

This ongoing debate among scholars incites two approaches regarding environmental attitudes: (a) attitudes toward the environment in general, and (b) attitudes toward an environmental behavior (Hines, Hungerford, & Tomera, 1986; Kaiser et al., 1999). The first type of approach considers the environment as a whole. This approach traditionally views an environmental attitude as a one-dimensional construct that ranges from one's being unconcerned about the environment at the low end to being concerned about the environment at the high end (Heberlein, 1981; Kaiser et al., 1999; Milfont & Duckitt, 2004, 2010). The second approach indicates that attitude measures are expected to predict only those behaviors closely related to a specific attitude under consideration (Ajzen & Fishbein, 1980; Weigel, 1983). This approach is based on the assumption that it is rare to form an attitude toward the environment as an object, but common to have a specific attitude toward environmental-related activities and issues (Milfont & Duckitt, 2004, 2010).

Two types of environmental attitudes have been used without conceptual consideration, which causes inconsistent results. In particular, some studies have found a strong relationship between environmental attitudes and behavior (Kellgren & Wood, 1986; Simmons & Widmar, 1990), but numerous studies have reported only a weak relationship between environmental attitudes and behavior (Heberlein, 1981; Kaiser et al., 1999; Mainieri, Barnett, Valdero, Unipan, & Oskamp, 1997; Stern, 2000). This weak relationship between environmental attitudes and behavior is known as the environmental attitude-behavior gap and implies that consumers reported themselves as very concerned

about the environmental issues, but their concerns and attitudes do not necessarily translate into actual behavior.

The gap between environmental attitude and behavior indicates that environmental attitudes have several conceptual and methodological flaws as a predictor of environmental behaviors. Previous literature has suggested plausible explanations behind this poor prediction of environmental attitude (Alwitt & Pitts, 1996, Bamberg & Schmidt, 2003; Heberlein, 1981; Mainieri et al., 1997; Milfont & Duckitt, 2004, 2010; Robert & Bacon, 1997). First, there is a low correlation among environmental behaviors. It is often presumed that, if someone engages in one type of pro-environmental behavior, he or she will probably engage in other types of pro-environmental behavior (Alwitt & Pitts, 1996). However, people do not appear to behave environmentally consistent across different domains (McKenzie-Mohr et al., 1995). Therefore, it is not valid to predict uncorrelated behaviors with a single attitude variable. Second, environmental behaviors occur in a specific context. To predict the behavior, attitudes also must be specified within the same context. The relationship between attitude and behavior is stronger when both of these constructs are measured at the same level of specificity (Ajzen & Fishbein, 1977). Third, a growing number of consumers already hold a moderate to high level of environmental concerns, and it becomes common to possess such an environmentally friendly attitude. For example, a recent research revealed that between 60 and 90 percent of North American consumers are concerned about the potential environmental impact of their behavior (Cleveland et al., 2005; Follows & Jobber, 2000). Given that a growing number of consumers already exhibit a high level of environmental concern, this concern would not make a meaningful contribution to the prediction of pro-environmental

behaviors. Last, Olson (1981) pointed out that there are large discrepancies between self-reported responses and the environmental impact of a consumption pattern. Factors such as social desirability and other types of response bias may result in inaccurate reports of actual behavior. Hence, one might expect that self-reported environmental concerns may not make a meaningful contribution to the prediction of actual pro-environmental behaviors. Likewise, although environmental attitudes are fundamentally important, widely discussed, and frequently measured, the predictive ability of attitude in the domain of environmental consumerism is debatable. The ongoing debates among scholars cause pessimistic views of the usefulness of environmental attitude as a single predictor of environmental behavior (Heberlein, 1981; Kaiser et al., 1999; Stern, 2000) and raised the necessity of including other variables to help complete the prediction of environmental behaviors.

Values in Consumer Behavior

Generally defined as abstract life-shaping standards and goals, values are one of the major influences on human behavior (Howard & Woodside, 1984; Pitts & Woodside, 1984; Rokeach, 1973) and examined as an important link to understand human behavior. As values have been embraced by the field of consumer psychology, values appear to hold promise as useful market segmentation variables (Howard & Woodside, 1984). Given the fairly widespread use of values in consumer research to understand consumers' motives, beliefs, attitudes, and behavioral intents, the current study aims to examine the role of values as a determinant of consumers' environmentally conscious behavior. This section reviews the definition of values and discusses how values have been connected to the area of consumer research in an environmental context.

Rokeach's (1973) definition of values has been referred to as a standard definition of values, and his theoretical foundations has influenced value studies in consumer research. Values are an "enduring belief that a specific mode of conduct or end-state is personally or socially preferable to an opposite or converse mode of conduct or end-state of existence" (Rokeach, 1973, p. 5). According to Rokeach's theoretical foundation, culture, society, and personality are the major antecedents of values, while attitude and behavior are the major consequences. Theories and research about consumer values have started with the broad question: Why do we buy what we buy? (Homer & Kahle, 1988; Howard & Woodside, 1984, Kahle & Xie, 2008; Pitts & Woodside, 1984). The question eventually positions consumer values as underlying motivations and psychological driving forces that affect consumer's decision-making process. Homer and Kahle empirically examined the relationship among values, attitudes, and behavior and found that there is a hierarchical relationship in the value chains. In other words, values (why do we buy) are considered to be major driving forces that affect attitudes and behavior (what we buy). As above studies have shown, there is a certain relationship among values, attitudes, and behaviors. The remaining task, however, is to verify how value chains have been used to measure and understand consumers' environmental behaviors.

Social Value Orientations

As a social being, people are often required to make decisions that have benefits not only for their own welfare but also for the welfare of those around them (Messick & Brewer, 1989). This is essence of social interdependence (McClintock & Allison, 1989). Social values are one of important individual differences in determining behavior in social interdependent decision-making settings (Messick & McClintock, 1968). Social

values have been primarily studied to explain a social conflict in a context of social dilemma (Kramer, McClintock, & Messick, 1986; Milfont & Gouveia, 2006). A social dilemma is defined as a situation in which an individual is faced with a social conflict between acting his or her own best interests (self-interest) or in the best interests of a group of which he or she is a member (cooperative) (Dawes, 1980; Messick & Brewer, 1983; Parks, 1994; Steg, 2003). Environmental problems, such as global warming, resource depletion, and pollution, are often considered as a typical example of social dilemmas (Dawes, 1980) in which self-interest choice is detrimental to shared resources in the environment and environmentally cooperative choice is beneficial to the environment (Parks, 1994; Steg, 2003).

In such a social dilemma situation, social value orientations helps categorize individuals as prosocials and proselfs based on individual preferences for distribution outcomes to self and others (Dawes, 1980; McClintock & Messick, 1986; Messick & McClintock, 1968; Milfont & Gouveia, 2006). It has been empirically proved that individuals differ in the relative importance or weight they assign to their own and others' outcomes, and that these differences, in turn, are expressed in their attitudes and behaviors (McClintock & Liebrand, 1988; Van Lange, Otten, De Bruin, & Joireman, 1997). Messick and McClintock (1968) empirically identified three social value orientations, referred to as cooperative, individualistic, and competitive oriented. Based on the systematic assessment of responses to resource allocation tasks, individuals have been classified as having a prosocial orientation if they consistently seek to either maximize joint outcomes between themselves and their partners (cooperators), or maximize their partners' outcomes independent of their own (altruists). Alternatively,

individuals are identified as having a proself orientation if they tend to either maximize their own outcomes relative to the outcomes of others (competitors), or maximize their own outcomes independent of the outcomes of others (individualists) (Cameron, Brown, & Chapman, 1998; Kramer et al., 1986; McClintock & Messick, 1986; Messick & McClintock, 1968).

A similar distinction was developed by Schwartz (1992, 1994) and Schwartz and Bilsky (1990) wherein the authors identified 10 motivational types of values: universalism, benevolence, conformity, tradition, security, power, achievement, hedonism, stimulation, and self-direction. These values were plotted in a two-dimensional space in which the different value types can be identified as separate clusters. The first dimension in Schwartz's value structure is openness to change versus conservatism, which distinguishes values that stress openness to new things and ideas, such as self-direction and stimulation, from values that emphasize traditional thoughts and ideas, such as tradition, conformity, and security (Schwartz, 1992). The second dimension, self-transcendent versus self-enhancement dimension, distinguishes values that stress the interests of others, society and nature, such as universalism and benevolence, from those that emphasize self-interest, such as power and achievement (Schwartz, 1992). The second dimension, self-transcendent versus self-enhancement, termed by Schwartz and Bilsky (1990) is comparable to the distinction between prosocial (altruistic or collectivism) versus proself (egoistic or individualism) (De Groot & Steg, 2007; Messick & McClintock, 1968; Stern, Dietz, Abel, & Guagnano, 1999), indicating that self-transcendence refers to concern for the welfare of others and self-enhancement refers to pursuit of one's own relative success and dominance over others.

Value Orientations and Environmental Behavior

Social value orientations appear to predict environmental behaviors in a social dilemma situation. Karp (1996) predicts a type of pro-environmental behaviors using value orientations developed by Schwartz (1992). For example, individuals who value self-transcendence and openness to change tend to express their belief through participatory actions, such as environmental activism, calling for social changes and individuals who value self-transcendence and conservatism are more likely to engage in pro-environmental behaviors that meet a normative standards, such as not littering (Karp, 1996). In contrast, individuals who value self-enhancement are less likely to participate in pro-environmental behaviors and even if they do, they do so when pro-environmental behavior is only beneficial for their own interest, such as shopping organic products for their own health and turning lights off in an unused room for saving electricity.

Similar research (Cameron et al., 1998) examined whether social value orientations influence intentions to participated in a community-based, pro-environmental program and how perceived personal costs associated with the program affect individual decisions to take pro-environmental action. The study revealed that although both prosocials and proselfs reported equivalent support for a transportation pollution reduction program and equivalent perceptions of the program's environmental benefits, proselfs reported higher perceptions of personal costs associated with supporting the program (Cameron et al., 1998). Likewise, proselfs are more likely to weigh their personal costs incurred from engaging in pro-environmental behaviors than prosocials.

The relationship between value orientations and pro-environmental behaviors was discussed with personal norms. Garling, Fujii, Garling, and Jakobsson (2003) proposed

that prosocial value orientations are closely related to personal norms, indicating that although both prosocials and proselfs have an equivalent supports for pro-environmental causes, prosocials are more influenced by personal norms than proselfs. The study implied that prosocials and proselfs have a different motivations to support the environmental causes and actions. If pro-environmental behavior explicitly requires personal sacrifices, prosocials are more likely to engage in this behavior than are proselfs (Garling et al., 2003).

McCarty and Shrum (2001) examined whether value orientations and economic status at an individual level have an influence on beliefs about the importance and the inconvenience of recycling. The study revealed that, for individuals who are more collectivistic (prosocial), beliefs about the importance of recycling are positively related to the propensity to recycle. However, for those who are more individualistic (proself), the importance of recycling is not a motivating issues, only the inconvenience of recycling predicts their recycling behaviors.

Kim and Choi (2005) proposed that value orientations are believed to guide consumers' concerns for the environment and subsequently affect their environmentally conscious behavior. For example, consumers who are collectivistic (prosocial) tend to be more concerned about the environmental consequences and tend to engage in environmentally conscious consumptions, such as switching from a conventional to green product for the environmental protection and avoiding a product that are detrimental to the environment than consumers who are individualistic (proself) (Kim & Choi, 2005).

Gupta and Ogden (2009) explained the rationale behind the gap between attitude and behavior by incorporating social dilemma theory and social value orientations to

understand environmental consumerism, for instance, a consumer's energy-saving light bulb purchase. The study confirmed that social value orientation together with other personal traits, including trust, in-group identity, expectation of others' cooperation, and perceived efficacy, is a significant predictor that differentiates green buyer from non-green buyers (Gupta & Ogden, 2009).

In sum, the concept of value orientations was initially discussed to explain the mechanism behind helping and cooperative behaviors in a situation of social dilemma. Because environmental problems, caused by social conflict between individuals holding different value orientations, are typically considered as one of social dilemmas, researchers have identified that there is a significant link between individual value orientations and a wide range of environmentally specific behaviors. Previous studies suggested that people who have a prosocial value orientation focus on optimizing benefits for others and have a greater propensity to engage in environmentally significant behaviors, such as recycling, saving and conserving energy, or participating in environmental activism (Garling et al., 2003; Karp, 1996; Steg & De Groot, 2010) than do people who have a proself value orientation (De Groot & Steg, 2010; Garling et al., 2003; Van Vugt, Van Lange, and Meertens, 1995).

Although value orientations have been identified as to explain various pro-environmental behaviors, limited research has been done investigating the role of consumer value orientations on green advertising effectiveness. The present study, hence, is to look at the influence of consumer value orientations on consumers' responses to green advertising and green product purchase. To answer the main research question with a theoretical support, two renowned theories are discussed.

Theoretical Frameworks

The aim of consumer research in an environmental context has been to develop theoretical models for better prediction of consumers' environmental behavior. The main research question proposed is based on behavioral theories: Ajzen and Fishbein's theory of planned behavior and Schwartz's norm activation model (as cited in Bamberg & Schmidt, 2003; Oom Do Valle, Rebelo, Reis, & Menezes, 2005; Stern, 2000).

Consumers' propensity to engage in pro-environmental behavior can be viewed as driven by self-interest or by altruism, or a combination of both. The position to view pro-environmental behavior as either self-interest or altruistic behavior is associated with the preference for a specific theoretical framework that guides the empirical research (Bamberg & Schmidt, 2003). The theory of planned behavior (Ajzen, 1991) assumes that pro-environmental behavior is guided mainly by the calculation of personal utility and cost (Bamberg & Schmidt, 2003), and the norm activation model is based on the assumption that pro-environmental behavior is driven mainly by personal norms and moral obligations (Schwartz, 1977).

Theory of Planned Behavior

The theory of planned behavior (TPB) states that behavior results from the intention to engage in a specific behavior, which assumes that consumers make a reasoned choice based on self-interest motives (Ajzen, 1991; Bamberg & Schmidt, 2003). The TPB has been used to explain many types of intentional social behavior. The stronger one's intention, the more effort one will make to engage in a particular behavior, and the more likely it is that one will engage in the behavior (Ajzen, 1991; Steg & Nordlund, 2012). The intention depends on attitudes toward the behavior, subjective

norms related to the behavior, and perceived behavioral control (Ajzen, 1991). Further, attitudes reflect the extent to which engaging in the behavior is evaluated positively or negatively. For instance, a positive attitude toward using public transportation and a negative attitude toward driving a car would result in greater use of public transportation and fewer cars on the road (Steg & Nordlund, 2012). Subjective norms reflect the extent to which a person believes that other society members would approve or disapprove of the behavior. For example, the rate of using public transportation is likely to be increased when a strong social norm exists where other society members tend to disapprove of driving. Finally, perceived behavioral control, also known as perceived consumer effectiveness (Balderjahn, 1988; Berger & Corbin, 1992; Kim & Choi, 2005) or locus of control (Cleveland et al., 2005; Guagnano, Stern, & Dietz, 1995; Kinnear et al., 1974; McCarty & Shrum, 2001; Schwepker & Cornwell, 1991), refers to the extent to which individuals believe that their actions make a significant difference in solving a problem (Ellen, Wiener, & Cobb-Walgren, 1991). Individuals with a strong belief that their environmentally conscious behavior will result in a positive outcome are more likely to engage in such behaviors in support of their concerns for the environment.

While the TPB has been used successfully to explain many types of intentional social behaviors, the TPB has been criticized for several reasons. First, the TPB is based on the premise that individuals act rationally with self-interest motives; therefore, the TPB would not be used to explain prosocial or altruistic behaviors (Denes-Raj & Epstein, 1994; Schwartz, 1977; Stern, Dietz, Abel, Guagnano, & Kalof, 1999). For example, socially conscious behaviors driven primarily by altruistic motivations, such as organ donations, have resulted in inconsistent predictions when using the TPB. Second,

another premise of the TPB is that behavioral intentions are determined by attitudes toward the specific behavior and subjective norms (Ajzen, 1991). In other words, prediction ability when using the TPB is more accurate when specific attitudes toward the behavior are considered. This implies that the TPB is not necessarily effective when used to explain the link between broader pro-environmental attitudes, belief, or values (i.e., general goals that serve as a guiding principle in one's life) and corresponding pro-environmental behaviors (Oom Do Valle et al., 2005; Steg & Nordlund, 2012).

The Norm Activation Model

While the TPB assumes that individuals make a rational, reasoned choice that is guided mainly by self-oriented motives, the norm activation model proposes that morality plays a key role in pro-environmental behaviors (Schwartz, 1977; Steg & De Groot, 2010). Morality in the norm activation model refers to personal norms that reflect feelings of moral obligation to perform or refrain from a specific action. When personal norms are activated, corresponding pro-environmental actions in a related domain will occur to comply with the personal norm (Schwartz, 1977). Originally developed and tested in the domain of helping behavior, the norm activation model assumes that, in a helping situation, internalized personal norms are activated when an individual notices a person in need and perceives negative consequences for the person if no action is taken. Additionally, when the individual perceives that his or her ability to engage in actions could help the person, helping behavior will occur (Bamberg et al., 2007). The norm activation model states that personal norms are activated by four key variables (Steg & De Groot, 2010; Steg & Nordlund, 2012): (a) when an individual is aware of the environmental consequences caused by his or her behavior (i.e., problem awareness); (b)

when he or she feels personally responsible for these problems (i.e., ascription of responsibility); (c) when he or she believes that his or her actions may help to reduce the relevant problems (i.e., outcome efficacy); and (d) when he or she feels able to engage in the actions needed to reduce the relevant environmental problems (i.e., self-efficacy). The norm activation model has been successfully used to explain various types of pro-environmental behaviors, such as willingness to support for community-based air pollution reduction programs (Guagnano et al., 1995), recycling and reuse of paper (Matthies et al., 2012), and use of public transportation (Bamberg et al., 2007).

While the norm activation model is successful in explaining various pro-environmental behaviors driven by personal norms, the model has several drawbacks. First, the main constructs have been conceptualized differently across studies (Steg & Nordlund, 2012). Some studies conceptualized the situational variables listed above on a general level, such as general awareness of environmental consequences (Stern et al., 1999), while other studies conceptualized problem awareness variables on a specific level, such as awareness of consequences caused by energy use (Steg & Nordlund, 2012). The norm activation model, like the TPB, is used to predict behaviors more successfully when predictor variables are tuned toward a behavior-specific level (Schwartz, 1977) rather than toward a general level. Second, the key premise of the norm activation model is that altruistic and helping behaviors are directly driven by personal norms; hence, the model is limited to being used to explain pro-environmental behavior that is driven exclusively by personal norms. Likewise, success of the norm activation model will decrease when it is used to explain conspicuous altruistic behaviors motivated by self-interest in acquiring social status or rewards, such as a person's purchasing

environmental friendly products for the purpose of being seen as a socially conscious consumer (Griskevicius et al., 2010).

Synthesis of Two Theories

The present study examines whether an individual's social value orientations have an influence on a consumer's pro-environmental behavior. Specifically, the study explores whether consumer value orientations have an impact on attitudinal and behavioral responses to green product purchase. The study seeks to answer the research question with a theoretical support. Accordingly, the study adopts the concept of social value orientations and its influence on altruistic, pro-environmental behaviors from the norm activation model. In addition, a causal chain of value–attitude–intention to behave is taken from the theory of planned behavior.

Based on the previous literature in social value orientations and the norm activation model, it is expected that pure altruism motivates individuals to contribute to the common good (Hartmann & Apaolaza-Ibanez, 2011). Prosocial behavior, also known as a “warm glow of giving” (Andreoni, 1990), explains that, with regard to environmentally conscious behavior choices, consumers experience the intrinsic, warm feeling of well-being as a consequence of the moral satisfaction engendered by contributing to the environmental common good (Hartmann & Apaolaza-Ibanez, 2011; Kahneman & Knetsch, 1992). As proved in previous studies, consumers driven by prosocial values are more likely to exhibit environmentally responsible behaviors than would consumers with proself values. Thus, it is likely to assume that prosocial consumers' propensity to engage in pro-environmental behaviors can translate into positive responses to green advertising and green product purchase intentions. Hence, the

present study hypothesizes that social value orientations help to predict individuals' responses to green advertising and green purchase intentions. Based on the previous literature in social value orientations, the TPB, and the norm activation model, the study predicts that prosocials may respond more positively to green advertising and show positive intentions to purchase green products than would proselfs.

The present study, however, explores whether a consumer's environmentally conscious behaviors, including green products purchases, are driven purely by prosocial values to help the environment or driven by proself values to signal others that he or she is environmentally conscious to gain social approval or rewards. This conspicuous environmental behavior is known as conspicuous conservation (Griskevicius et al., 2010; Sexton & Sexton, 2012). While consumers' pro-environmental behaviors driven by altruistic and prosocial values can be theoretically explained with the norm activation model, intentionally engaging in environmentally conscious behaviors, such as showing off your 'greenness' or over-spending on environmentally friendly products to display your ability to support environmental causes, called conspicuous conservation, cannot be explained with conventional prosocial behavior theories (Andreoni, 1990). The study, hence, adopts the use of the costly signaling theory and competitive altruism to explain conspicuous environmental behaviors.

Conspicuous Environmental Behaviors

Traditionally, consumers' environmental behaviors, from carrying a grocery bag to commuting to work by bicycle, have been considered self-sacrifice and prosocial behaviors for the benefit of the environment. However, as environmental issues are garnering public attention, as society requires individuals' austerity rather than

ostentation for the benefit of the environment, as consumers seek social status and reputation through display of mindful consumption to others, and as consumers' motivations to purchase environmentally friendly products become multifaceted, it becomes common to observe a new type of pro-environmental behaviors, called conspicuous conservation (Griskevicius et al., 2010; Sexton & Sexton, 2012). As the "Prius Halo" story in previous chapter implied, consumers' conspicuous environmental behaviors cannot be explained with a classic prosocial behavior theory.

Status Signaling Theory

The concept of status signaling has been often discussed in the context of conspicuous consumption. The theory is used to explain that people tend to signal their social status and reputation by expressing their ability to afford expensive goods (Sheth, Shethia, & Srinivas, 2011). Traditionally, conspicuous consumption has been discussed with regard to luxury goods. As Silverstein and Fiske (2008) predicted, however, consumers tend to seek new wave of luxury goods, such as home renovations with "green" elements and technologies or hybrid-electric vehicle, as the consumption trend has shifted toward sustainable goods. As sustainable consumption becomes spotlighted in the marketplace, the status signaling theory also is applied to explain conspicuous pro-environmental purchases. In a traditional society, a person who is able to give away the greatest number of resources is regarded as the highest standing member in a group. In contemporary society, tycoons such as Ted Turner and Bill Gates, who have made large donations, have been rewarded with status and prestige (Griskevicius et al., 2010).

Competitive Altruism

The theory of competitive altruism, paired with the signaling theory, can be used

to explain consumers' conspicuous sustainable consumption (Griskevicius et al., 2010) and to suggest that engaging in pro-environmental behaviors such as saving energy, purchasing green products, or sponsoring pro-environmental institutions is partially driven by status motives. For example, consumers' paying a premium to purchase a hybrid vehicle instead of choosing a conventional but equally fuel-efficient alternative can be explained in the context of competitive altruism and the signaling theory (Griskevicius et al., 2010). Consumers who choose to purchase green products demonstrate that they are willing and able to incur the cost of owning a product that benefits the environment and society because voluntary acts of self-sacrifice and the ability to incur costs are associated with status and reputation (Barclay, 2004; Griskevicius et al., 2010). Certainly, there is a link between conspicuous pro-environmental behaviors and a desire to be seen as a conscious consumer.

According to the costly signaling theory and competitive altruism, one of the key factors in how status motives influence pro-environmental behavior is the extent to which the behavior occurs in public versus private (Griskevicius, Tybur, Sundie, Cialdini, Miller, & Kenrick, 2007). Public self-awareness, also known as public self-consciousness, is considered the degree to which individuals are aware of how they and their actions are being evaluated by others (White & Peloza, 2009).

Public Self-Awareness

Public self-awareness is defined as an individual's tendency to identify the self and evaluate its own actions through another's standpoint (White & Peloza, 2009). Public self-awareness is closely related to social influence, driven by social norms. Like most human behaviors, consumers' environmental behaviors exist in a social context

where certain social norms exist. Social influence is mainly driven by social norms that “guide and/or constrain human behavior without the force of laws” (Cialdini & Trost, 1998, p. 152). Individuals respond to cues about behavior choice based upon observing others’ behaviors and how one believes a particular behavior will be viewed by others (Keizer & Schultz, 2012). Social influence can be explained with the social cognitive theory, suggesting that individuals’ behavioral choice is directly related to observing others within the context of social interaction, experiences, and other social influences (Bandura, 2009). Social influences result largely from categorizing oneself as a member of a specific group, and then adopting the attitude and behaviors that are shared by the other members of the group (Hogg, 2003). Conforming to social norms is often associated with social acceptance or rewards, whereas violating norms often results in disapproval and social sanctions (Biel & Thorgersen, 2007; Keizer & Schultz, 2012)

Research has been conducted regarding the role of public self-awareness to elicit prosocial and cooperative behaviors. Griskevicius et al. (2010) asserted that status motives lead people to prefer environmentally friendly products rather than non-green luxury products when the purchase decision is made in public. White and Peloza (2009) compared self-benefit message appeals with other-benefit appeals for charitable support. Self-benefit appeals emphasize that the main beneficiary of the support is the donor whereas other-benefit appeals highlight that the main beneficiary of the support is other individuals, organizations, or society. The results indicated that the rate of donations to charity is higher with other-benefit appeals in a situation where individuals feel that their actions are likely to be seen and evaluated by others than in a situation where their actions go unnoticed. In contrast, self-benefit appeals are more persuasive in a situation

where individuals feel that their actions are mainly in private. Public self-awareness would promote consumers to spend on green products whose consumption is mainly seen by others in public. For instance, homeowners over-invest in solar panels and under-invest in other green improvements, such as additional insulation and window sealing treatments, because the former improvements are easily noticeable by others in public than the later (Dastrop, Zivin, Costa, & Kahn, 2010).

The relationship between individuals' level of public self-awareness and their pro-environmental behaviors is discussed in a context of social dilemmas, as well. In a situation of social dilemmas, public self-awareness is used to elicit prosocial behaviors. An effective way to encourage cooperative, prosocial behaviors is to make those behaviors more publically identifiable than proself behaviors (Garling, Biel, & Gustafsson, 1999). The level of cooperation is much higher when the respondents make choices in public rather than in an anonymous situation, indicating that prosocial behaviors that are acknowledged by others in public seem to promote feelings of social rewards and reputations (Van Lange, Liebrand, Messick, & Wilke, 1992). Consequently, the study assumed that proselfs tend to be environmentally conscious when their actions are publically identifiable rather than private. Thus, presumably, proselfs are likely to show more favorable attitudes toward a green product if its consumption is seen mainly in public than in private.

Given the recent trend and theoretical explanations behind conspicuous environmental behaviors, the present study was initiated with the question of whether a consumer's purchasing an environmentally friendly product is driven purely by prosocial motivations to help the environment or driven by self-oriented motivation to signal to

others that he or she is prosocial to achieve social status and reputation. Based on the previous research on social value orientations that are used to explain the effects of value orientations on consumers' environmental behaviors, the study posits that proselfs are less likely to be environmentally conscious when they evaluate green advertising and green products. The assumption, however, is expected to be shifted if a consumption of green products brings strong public self-awareness. Conspicuous environmental behavior is explained by the costly signaling theory, competitive altruism, and the social payoff structure of social dilemmas, as there are important links between environmental behaviors, displays of caring, and competition for status.

The following section starts with a background of green advertising and how marketing communications with environmental themes have been developed to encourage consumers to engage in pro-environmental behaviors, also known as green purchase behaviors. Specifically, the following section reviews how advertising messages with an environmental theme have been framed to encourage pro-environmental behaviors and promote consumers to switch from buying conventional products to purchasing environmentally friendly products. Lastly, the section covers greenwashing practices and how consumer skepticism driven by these practices has affected consumers' responses to green advertising and green purchase behaviors.

Green Advertising

Background of Green Advertising

The modern day environmental movement can be traced back in April 1970, when the first Earth Day was held in the United States. Earth Day was a nationwide public awareness of environmental issues including the rising toxicity in the Great Lake,

oil spills, the loss of wilderness, polluting factories, and power plants. In response to the need for government organizations to enforce legislation, the United States Environmental Protection Agency was established in 1970. During the 1980s, the Chernobyl nuclear disaster and the Exxon Valdez oil spill accelerated international awareness of the need for environmentally responsible behavior. In 1987, the concept of sustainable development was introduced at the World Commission on Environmental Development, in which a balance between economic development and environmental protection was emphasized. In 1992, the United Nations Conference on Environment and Development, known as the Earth Summit, was held in Rio de Janeiro, where air and water pollutants by industry and the need for alternative source of energy were discussed. Throughout the series of international treaties and a large scale of environmental disasters during the last few decades, the recognition of public awareness of environmental issues and the concept of sustainability that emphasizes both economic development and environmental protection has increased globally.

Businesses are the engines of a nation's economic growth, but also devour a disproportionate share of the world's finite resources and produce a disproportionate share of its emissions. Businesses also generate innovative technologies that help to reduce resource use and lessen pollution. As both a cause of and a solution to environmental degradation, business sectors appear to have a majority of the responsibility regarding environmental protection. Business entities, on the other hand, can capitalize on the widespread public awareness of environmental issues and incorporate this new movement into their corporate goals and strategies.

Corporations have responded to the shift in the consumer movement and the

resultant emergence of a new market by launching new products with a green claim. As measured by Mintel Global New Product Database (GNPD) in 2012, total new product introductions in consumer packaged goods (CPG) with a green claim accounted for only 1 percent of all introductions in 2005 (O'Donnell, 2012). In 2012, products labeled with the words “environmentally friendly packaging,” “environmentally friendly products,” and/or “carbon neutral” increased to 15.2 percent of new CPG products (O'Donnell, 2012). The notion of green now appears to be ingrained in the minds of consumers. Accompanying the increased number of introductions of environmentally beneficial products, there has been a rise in the incidence of green advertising.

Green advertising varies in the extent to which it addresses environmental issues, from simple claims on the environmental benefits of products or services, to corporate image campaigns that project the environmental credential of companies, to public campaigns that encourage environmentally responsible behaviors (Carlson, Grove, & Kangun, 2003; Iyer & Banerjee, 1993). Green advertising in the early of 1990s was initially integrated as a marketing strategy by large industry entities such as chemical, pharmaceutical, or energy companies, which are often cited as the major cause of environmental degradation, to clean up their images by producing green advertising that projects a more environmentally responsible image (Bishop & Chow, 2010). Examples include Du Pont's and Dow Chemical's ads that depict the beauty of nature to show their ongoing commitment to the environment (Bishop & Chow, 2010).

In the 2000s, a wide range of industries, including consumer goods, automotive, food and beverage, began to adopt green advertising, not just for showing their commitment to the environment, but for introducing the environmental benefits of their

products and encouraging consumers' engagement in environmentally responsible behaviors (O'Donnell, 2012). As the market trend indicated, a greater number of companies are now communicating about the greenness of their products and practices to reap the benefits of the expanding green markets. According to Terra Choice Group (2009), green advertising has increased almost tenfold in the last 20 years and nearly tripled since 2006. In 2008, almost 12 percent of advertisements collected for the survey contained at least one green claim (Terra Choice Group, 2009).

Research Stream of Green Advertising

As green claims in advertising have dramatically increased, there has been a concomitant rise in the incidence of academic research in environmental advertising (Hartmann & Apaolaza-Ibanez, 2009). Banerjee et al. (1995) defined green advertising as an imperative communication tool that delivers green marketing initiatives; subsequent literature has frequently referred to this definition. According to Banerjee et al. (1995), green advertising is defined as any ad that meets one or more of the following criteria: (a) explicitly or implicitly addresses the relationship between a product or service and the ecological environment, (b) promotes an environmental lifestyle with or without highlighting a product or service, or (c) presents a corporate image of environmental responsibility.

Although research in green advertising has a relatively short history, a wide range of perspectives and methods has been presented in academic research. Academic research in green advertising can be divided into three broad streams: (a) descriptive studies that analyze green claims in advertising (Banerjee et al., 1995; Carlson et al., 2003; Iyer & Banerjee, 1993; Kangun, Carlson, Grove, 1991); (b) empirical research that

employs either experiments or surveys to gauge the effects of green messages on the purchase of products and the adoption of specific pro-environmental behaviors in the minds of consumers (Davis, 1995; Hartmann & Apaolaza-Ibanez, 2010; Obermiller, 1995; Schuhwerk & Lefkoff-Hagius, 1995); and (c) research that addresses emerging topics in green advertising, such as greenwashing and consumers' skepticism toward green messages in advertising.

Descriptive studies of green claims. The first stream of green advertising research, carried out in the early to mid-1990s, dealt primarily with a descriptive analysis of green claims in advertising. One of the early exploratory studies done by Iyer and Banerjee (1993) revealed that more than half of the green ads that Iyer and Banerjee analyzed were corporate image ads and used mainly bandwagon messages. For example, “We care about the environment” largely emphasized corporate sustainable responsibility in the ad, implying that those types of ad appeals merely tried to ride the popular wave of the green movement. Banerjee et al. (1995) confirmed that green advertisements seemed to be a mere acknowledgement of public concern about the environment rather than an element of a substantive marketing strategy.

Green claims in advertising have been analyzed with criteria enforced by the Federal Trade Commission (Kangun et al., 1991). The authors noted that the words commonly used in much environmental advertising, such as “degradable,” “recycled,” “recyclable,” or “environmentally friendly,” are either vague or misleading (Kangun et al., 1991). Even different companies use the same terms to promote different environmental benefits. Given concerns about widespread misuses of green claims in advertising, the study developed a classification typology for categorizing potentially

misleading/deceptive environmental advertising claims. The results revealed that almost half of the environmental advertisements from a collected sampled of ads were identified to have at least one misleading/deceptive claim (Kangun et al., 1991).

Descriptive research in green advertising indicated that a significant amount of green claims in advertising has been abused and/or misused. As green messages have been overly promoted as a panacea in ways on which it does not deliver, environmentally conscious consumers as well as ordinary consumers have become aware of these purposive, misleading, and deceptive green claims in advertising, as known as greenwashing. Descriptive studies of green claims have made several contributions to the subsequent research stream. First, the notion of green has been addressed more cautiously because green advertising, once believed to bring competitive advantage to a brand, is no longer considered an effective marketing communication tool. Second, as the notion of greenwashing becomes an emerging issue, both practitioners and scholars have focused their attention on legal and ethical issues related to green advertising. Finally, as consumers' skepticism toward green claims in advertising has become prevalent, there has been a challenge for advertisers to address the question of how to frame green messages to persuade consumers to more consistently act on their beliefs, thereby encouraging their environmentally conscious behavior (Davis, 1995; Kees, 2011; Obermiller, 1995). Both in practice and in academia, there has been a need to develop more precise research to enhance the relative persuasiveness of green advertising by framing messages in the way they are intended.

Message framing in green advertising. The second stream of green advertising research is environmental message framing. Message effectiveness of persuasive

communications, such as health, environmental, and political messages, has been often discussed within the concept of framing (Davis, 1995; Kees, 2011; Maheswaran & Meyer-Levy, 1990; Obermiller, 1995; Schuhwerk & Lefkoff-Hagius, 1995; White, MacDonnell, & Dahl, 2011). Consumers can construe objective information as more or less meaningful, relevant, or important, depending on how the message is being framed. There has been research that investigates messages framed in different ways.

Gain and loss framing. Research in framing can be traced back to 1981, when Tversky and Kahneman (1981) developed the prospect theory to explain people's irrational decisions, with their choices' depending on how they are being framed in terms of gains or losses. According to the prospect theory, gains and losses are evaluated from a subjective reference point (Tversky & Kahneman, 1981). The displeasure associated with a loss is greater than the pleasure associated with the same amount of gain (Tversky & Kahneman, 1981). Therefore, people respond to choices differently, depending on whether those choices are framed in terms of gains or losses. Gain and loss framing is widely used in determining consumers' environmentally conscious behavior. Davis (1995) examined gain versus loss message appeals in terms of problem definition (the benefits of recycling versus the dangers of not recycling) and concluded that messages that focus on the danger of not taking action (loss frame) are more persuasive, evoking a positive behavioral intention, than the messages that focus on the benefits of taking action (gain frame).

Temporal framing. Time framing is another way used to structure messages to elicit persuasiveness. Davis (1995) pointed out that time framing influences how individuals conceptualize the environmental problem and evaluates the outcome of an

action. One way in which time framing exerts this influence is by comparing when the outcome of environmental actions would come (Davis, 1995). The author compared the effect of messages that focus on environmental consequences to the present generations (short-term consequences) with the consequences to future generations (long-term consequences) and concluded that framing the negative consequences of not taking pro-environmental behaviors to the present generation evoked more persuasive effects than did framing the risks to future generations. The author emphasized that individuals are apt to overestimate immediate consequences and overlook distant consequences because they identify themselves as the target who is directly affected by the immediate consequences (Davis, 1995).

Short-term versus long-term consequences also are discussed in the context of social dilemmas with the concept of social value orientations. A social conflict (individual versus collective interests) was understood as one traditional view of social dilemma, however, Messick and Brewer (1983) and Joireman, Van Lange, and Van Vugt (2004) have presented an expanded conceptualization of social dilemmas with two conflicts: a social conflict (individual versus collective interests) and a temporal conflict (short- versus long-term interests). Human behaviors driven by self-interest that overlook long-term collective consequences predominantly cause the scarcity of environmental resources (Garling, Fujii, & Garling, 2001; Kramer et al, 1986; Messick & Brewer, 1983). Therefore, society would benefit from a cleaner environment if individuals voluntarily restrain their immediate self-interests and exercise a level of personal restraint to protect the long-term collective welfare. Yet, protecting the long-term collective welfare often fails because as a rational, self-oriented being, an individual would act

primarily to protect his or her own immediate benefits, regardless of the possible long-term benefits (Biel & Thøgersen, 2007; Dawes, 1980; Parks, 1994).

The relationship between time perspective and value orientations was empirically examined to predict environmentally conscious behaviors and intentions. Milfont and Gouveia (2006) found that individuals driven by prosocial values are more likely to support for environmental protections than environmental utilization and prepare themselves from potential future risks that may result from current environmentally detrimental behaviors. Proselfs, in contrast, tend to support for utilization of environmental resources than environmental protections and more concerned about immediate behavioral outcomes. Given the results from previous studies that have proven the relationship between value orientations and temporal conflict in an environmental dilemma, the present study assumed that proselfs tend to be more responsive to a green message that focuses on short-term consequences rather than on those over the long term.

With the theoretical support from the social value orientations, the TPB, and the norm activation model, the study queries whether consumers' value orientations predict their responses to green advertising and further intentions to purchase a green product. Specifically, the study is interested in looking at how seemingly opposing value orientations, namely self-transcendence (prosocial) and self-enhancement (proself), differently affect consumers' attitudinal and behavioral responses to green advertising and a green product. Given the theoretical support from the status signaling theory, competitive altruism, and social payoff structure in a social dilemma, it is assumed that consumers driven by self-enhancement (proself) orientation tend to display conspicuous

pro-environmental behavior, indicating that they are more likely to purchase a green product whose consumption is seen primarily in public than in private and to prefer engaging in a green claim that promises an immediate benefit to the environment than future benefit to the environment.

In sum, the study hypothesizes that there is a certain link between consumers' value orientations and their responses to green advertising and intentions to purchase a green product. The link, however, is expected to be moderated by public self-awareness and benefit distance of environmental claims. The study proposes that another variable, consumers' skepticism toward a green claim, has a certain effect on consumers' responses to green advertising and behavioral intentions. In the following section, consumers' skepticism toward green claims in advertising and a significant driver of consumers' skepticism, known as greenwashing, are reviewed.

Consumer Skepticism toward Advertising

Greenwashing and Skepticism

The prevalence of greenwashing has rapidly increased in recent years. The multitude of vague and misleading environmental claims has caused consumers to question corporate credibility and to accuse companies of greenwashing (Furlow & Knott, 2009). In addition, consumers do not have the expertise and knowledge to verify green products' environmental values, creating misperception and skepticism. Not only does greenwashing mislead consumers, but as unscrupulous marketers continue to make vague and misleading environmental claims, companies that stay true to their environmental mission lose their competitive edge. In addition, overly promoted and misused green claims can saturate the market to the point where the greenness of the

product may become meaningless to the consumer (Zimmer, Stafford, & Stafford, 1994). Similarly, greenwashing appears to have profound negative effects on consumers' and stakeholders' confidence in green products and the firms, making the consumers and stakeholders reluctant to reward companies for environmentally friendly operations (Delmas & Burbano, 2011). This eventually leads consumers to become skeptical toward green claims and, further, toward the product, and the firm. In the following section, consumers' skepticism toward green claims in advertising and how skepticism influences consumers' responses to green advertising and the featured products are discussed.

Advertising Skepticism

The persuasiveness of environmental claims in advertising depends on a consumer's level of skepticism. Public policymakers, consumer interest groups, and other organizations who are concerned with advertisers' potential to mislead consumers generally believe that consumer skepticism of advertising claims is a healthy skill that protects consumers from fraud and misleading marketing claims and prevents advertisers from engaging in potentially deceptive practices (Kim & Lee, 2009). In addition, such skepticism may provide an incentive for advertisers to provide objective and verifiable advertising claims (Mohr, Eroglu, & Ellen, 1998; Obermiller & Spangenberg, 1998; Mohr et al., 1998).

As a construct, advertising skepticism received academic attention when Obermiller and Spangenberg (1998) developed a scale to measure consumer skepticism toward advertising in general, referred to as ad skepticism. The authors conceptualized ad skepticism as a stable and overarching belief about how advertising operates in the marketplace. Ad skepticism has been frequently compared to other relevant constructs,

including persuasion knowledge (Friestad & Write, 1994), attitude toward advertising in general (MacKenzie & Lutz, 1989), and cynicism (Mohr et al., 1998).

First, the persuasion knowledge model (Friestad & Write, 1994) includes a broad array of knowledge about advertisers' persuasion techniques and appropriate coping strategies. Ad skepticism, however, refers to a single consistent response tendency. Greater persuasion knowledge implies greater control of the persuasion outcome rather than resistance to persuasion (Friestad & Write, 1994). Second, ad skepticism is conceptually different from attitudes toward advertising. There are many factors other than skepticism-based beliefs that underlie attitudes toward advertising (Obermiller & Spangenberg, 1998). Attitudes toward advertising scales include items that reflect ad skepticism, but also include unrelated items such as those that involve general evaluative belief or items that refer to the effect of advertising on society (DeLorme, Huh, & Reid, 2009; Obermiller & Spangenberg, 1998). Last, skepticism is often compared to cynicism. Cynicism is defined as an "enduring disbelief of others that occurs when people are seen as acting solely based on selfish motives" (Mohr et al., 1998). Cynicism is described as a personality trait that is stable across contexts and through time. Skepticism, however, is a cognitive response that varies, depending on the content of the communication (Mohr et al., 1998).

Although considerable prior research has conceptualized skepticism as a stable and enduring trait that predisposes individuals to doubt the veracity of various forms of advertising, consumers are certainly varied in their predisposition toward skepticism (Obermiller & Spangenberg, 1998; Obermiller, MacLachlan, & Spangenberg, 2005). Forehand and Grier (2003) argued that there are two types of consumer skepticism:

predispositional skepticism and situational skepticism. Whereas predispositional skepticism is a more stable tendency of disbelief toward marketing practices, including advertising in general, situational skepticism is a temporary state in which a consumer doubts a certain context of advertising claims (Kim & Lee, 2009). Mohr et al. (1998)'s conceptualization of skepticism toward green claims in advertising seems to parallel Forehand and Grier's (2003) concept of situational skepticism.

Although Forehand and Grier (2003) made a conceptual distinction between predispositional and situational skepticism, the present research proposes that consumer skepticism is a combination of predispositional and situational skepticism. A consumer not only possesses a certain degree of predispositional skepticism that is an outcome of personality trait and prior consumption experience, but also possesses a certain degree of situational skepticism. By focusing on situational skepticism, a temporarily heightened disbelief toward a certain context of advertising, both businesses and government could better leverage consumers' responses as they attempt to improve communication with consumers. Hence, the present study focuses on consumer skepticism toward green claims in advertising because it is better likely to predict consumers' attitudinal responses to green advertising and their environmentally conscious behaviors than would skepticism toward general advertising messages.

Consumer Skepticism toward Green Claims

As environmental issues are gaining prominence in the media and in the minds of consumers, companies have begun to capitalize on consumers' desire for environmentally conscious products. As marketers' claims about the environmental effects of products become more pervasive and as consumers' confusion over false and misleading claims

prevails, consumers receive such claims with some degree of skepticism (Albayrak, Caber, Moutinho, & Herstein, 2011; Baqer, 2011; Mohr et al., 1998; Obermiller et al., 2005; Shrum, McCarthy, & Lowrey, 1995). Other aspects associated with green products and regulations, such as the perceived high cost of green products, lack of environmental regulations, and price/convenience dilemmas, also accelerate consumers' level of skepticism with regard to green claims, green products, and even green consumption as a whole (Baqer, 2011). Certainly, the persuasiveness of environmental claims in advertising presumably depends on consumers' levels of skepticism.

Consumer Skepticism and Green Advertising Effectiveness

Skepticism toward marketing communications, specifically advertising, and its negative consequences to message effectiveness have been empirically proved in previous research (Ford, Smith, & Swasy, 1990; Forehand & Grier, 2003; Kim & Lee, 2009; Obermiller et al., 2005). Skeptical consumers are less positive in response to advertising: They like it less, believe it less, and deem it less influential. In addition, skeptics avoid advertising; therefore, the link between exposures to green advertising and purchasing is very weak. While ad skepticism and its negative consequences have numerous empirical findings, skepticism toward environmental claims has received limited academic attention. Skepticism and its negative inputs into green advertising and green purchase behaviors have been more frequently discussed in practice. Based on relatively scarce academic research on skepticism in an environmental communication context, the study assumes that skepticism toward environmental claims has a negative effect on consumers' attitudes toward green advertising and green purchase intention (Albayrak, 2011; Mostafa, 2007). As predicted, the links between consumers' display of

environmental purchases would depend on their level of skepticism toward green claims featured in advertising.

In sum, the study started with the question of whether consumers' value orientations predict their attitudinal responses to green advertising and further green product purchase. The study specifically reviews how seemingly opposing value orientations, namely, self-transcendence (prosocial) and self-enhancement (proself), differently affect consumers' responses to green advertising and intentions to purchase a green product. Given the assumption of conspicuous conservation, indicating that a consumer with a self-enhancement (proself) orientation has a greater propensity to purchase a green product whose consumption is primarily seen in public and more likely to be persuaded by a green claim that promises an immediate benefit to the environment than do consumers with a self-transcendence (prosocial) orientation, the study proposes that there is a certain relationship between consumers' value orientations, level of consumers' public self-awareness, and perceived benefit distance. Further, based on research in skepticism toward green claims, the study assumes that there should be a certain link between skepticism toward green claims and consumers' attitudes toward green advertising, green products, and intentions to purchase a green product. The next section summarizes the literature reviews and proposed corresponding hypotheses.

Summary and Hypotheses

Determinants of Green Consumer Behavior

As the issue of environmental deterioration has become prevalent and environmental concerns and awareness among consumers have rapidly grown, both marketers and scholars have attempted to identify this group of consumers and build a

theoretical model to predict their behaviors to deliver persuasive communication messages and derive green purchase commitment (Banerjee et al., 1995). Among Stern's (2000) four categories of variables to explain environmentally significant consumer behavior, environmental attitude is most frequently studied as a predictor of pro-environmental behaviors (Kaiser et al., 1999; Milfont & Duckitt, 2010). However, it has been noted that environmental attitude has several conceptual flaws as a predictor of environmental behaviors. First, it is invalid to predict the multidimensional nature of pro-environmental behaviors with a single attitude variable. Engaging in one type of pro-environmental behavior does not necessarily imply engaging in another type of pro-environmental behavior, as people do not appear to behave environmentally consistent across different domains (McKenzie-Mohr et al., 1995). Second, environmental behaviors occur in a specific context. The relation between attitude and behavior is stronger when both of these constructs are measured at the same level of specificity (Ajzen & Fishbein, 1977). Third, environmental concern, a general environmental attitude and affect or worry associated with environmental issues (Schultz et al., 2004), does not necessarily translate into actual green behavior. A recent survey revealed that between 60 and 90 percent of North American consumers reported that they are concerned about the potential environmental impact of their consumption (Cleveland et al., 2005; Follows & Jobber, 2000). Given that a growing number of consumers already exhibit a high level of environmental concern, this concern would not make a meaningful contribution to the prediction of pro-environmental behaviors.

The gap between environmental attitudes and behavior indicates that a considerable number of consumers who claim to be environmentally conscious still do

not purchase green products. This incongruence between environmental attitude and actual purchasing has become an obstacle to green marketers, and it provides the trigger for the current research. The key issue to ameliorate the problem lies primarily in understanding what gets people to buy green products. Thus, psychological-based approaches are recommended to identify the antecedents of environmentally responsible consumption (Kaiser et al., 1999; Stern, 2000).

Social Value Orientations

Social value orientations, indicating individual differences in the relative importance they assign to their own and others' outcome, help categorize individuals as prosocials and proselfs (Dawes, 1980; Milfont & Gouveia, 2006; Van Lange et al., 1997). Schwartz identified the distinction between self-transcendence and self-enhancement as comparable to the distinction between prosocial and proself (De Groot & Thøgersen, 2012; Messick & McClintock, 1968). Previous studies have identified the link between social value orientations and a wide range of environmentally specific behaviors, such as recycling, saving and conserving energy, participating in activism, and buying environmentally friendly products (De Groot & Steg, 2010; Garling et al., 2003; Karp, 1996). In sum, it is assumed that people who have a prosocial value orientation focus on optimizing benefits for others, thereby having a greater propensity to engage in environmentally significant behaviors than would people who have proself value orientations, giving priority to themselves (De Groot & Steg, 2010; Garling et al., 2003; Van Vugt et al., 1996).

Theoretical Frameworks

Theory of planned behavior. While the theory of planned behavior (TPB) has

been used to explain many types of intentional social behaviors, the TPB has several limitations in explaining pro-environmental behavior. First, the TPB is based on the premise that individuals act rationally with self-interest motives; therefore, the TPB has not been used to explain prosocial (Denes-Raj & Epstein, 1994), or altruistic behaviors (Schwartz, 1977; Stern et al., 1995). Second, another premise of the TPB is that behavioral intentions are determined by attitudes toward specific behavior and subjective norms (Ajzen, 1991). In other words, when the TPB is used to predict behavior, it is more accurate when specific attitudes toward the behavior are considered. This means that the TPB is not necessarily effective when used to explain the link between individual social values (i.e., a more general belief that serves as a guiding principle in one's life) and corresponding pro-environmental behaviors (Oom Do Valle et al., 2005; Steg & Nordlund, 2012).

The norm activation model. The norm activation model appears to be successful when it is used to explain various pro-environmental behaviors driven by personal norms. The model, however, has several drawbacks. First, the norm activation model, like the TPB, will be used to better predict behaviors when predictor variables are tuned toward behavioral-specific levels (Schwartz, 1977) rather than toward a general level. Second, the key premise of the norm activation model is that altruistic behaviors are driven by personal norms. Hence, the model is limited to explaining pro-environmental behavior that is exclusively driven by personal norms. The ability to predict pro-environmental behavior using the norm activation model will diminish when explaining conspicuous altruistic behaviors motivated by self-interested values for acquiring social status or rewards (Griskevicius et al., 2010), which is presumably driven

by social norms and social influence.

Synthesis of two theories. The purpose of the study was to examine whether an individual's social value orientations would have an influence on a consumer's pro-environmental behavior. Given conceptual drawbacks that each theory has to explain the effects of social value orientations on green advertising effectiveness, the present study adopts two theories to explain the relationship. The effects of social value orientations and its influence on pro-environmental behaviors are explained with the norm activation model. In addition, the causal chain of attitude–intention–behavior is taken from the theory of planned behavior.

Hypothesis 1: Consumers' social value orientations will affect (a) advertising attitudes, (b) brand attitudes, and (c) purchase intentions. Specifically,

Hypothesis 1a: Consumers who are prosocial-oriented will have (a) more positive advertising attitudes, (b) more positive brand attitudes, and (c) higher purchase intentions than will consumers who are proself-oriented.

Conspicuous Environmental Behavior

As environmental issues are garnering public attention, as society requires individuals' austerity rather than ostentation for the benefit of the environment, as consumers seek social status and reputation through display of mindful consumption, and as consumers' motivations to purchase environmentally friendly products become multifaceted, it becomes common to observe these conspicuous environmental behaviors (Griskevicius et al., 2010; Sexton & Sexton, 2012). The costly signaling theory and competitive altruism have been used to explain consumers' conspicuous displays of altruistic and prosocial behaviors (Griskevicius et al., 2010). Consumers who purchase

green products demonstrate that they are willing and able to incur the cost of owning a product that benefits the environment and society, as voluntary acts of self-sacrifice and the ability to incur costs are associated with status and reputation (Barclay, 2004; Griskevicius et al., 2010). Certainly, there is a link between conspicuous pro-environmental behaviors and a desire to be seen as a conscious consumer. According to the costly signaling theory and competitive altruism, one of the key factors in how status motives should influence pro-environmental behavior is the extent to which the behavior occurs in public versus private (Griskevicius et al., 2007).

Public Self-Awareness

Public self-awareness is defined as an individual's tendency to identify the self and evaluate its own actions in public (White & Peloza, 2009). People consistently evaluate themselves and see their own actions through others' perspectives. Competitive altruism and the status signaling theory are used to explain the relationship between public self-awareness and pro-environmental behavior and to suggest that engaging in pro-environmental behaviors is partially driven by status motives. The relationship between individuals' level of public self-awareness and their pro-environmental behaviors is discussed in a context of social dilemmas, as well.

In a situation of social dilemmas, public self-awareness is used to elicit prosocial behaviors. An effective way to encourage cooperative, prosocial behaviors is to make those behaviors more publically identifiable than proself behaviors (Garling, Biel, & Gustafsson, 1999). The level of cooperation is much higher when the respondents make choices in public rather than in an anonymous situation, indicating that prosocial behaviors that are acknowledged by others in public seem to promote feelings of social

rewards and reputations (Van Lange, Liebrand, Messick, & Wilke, 1992). Consequently, the study assumed that proselves tend to be environmentally conscious when their actions are publically identifiable rather than private. Thus, presumably, the study predicts that proselves are likely to show more favorable attitudes toward a green product if its consumption is seen mainly in public than in private.

Hypothesis 2: The effects public self-awareness on (a) advertising attitudes, (b) brand attitudes, and (c) purchase intentions will be moderated by consumers' social value orientations. Specifically,

Hypothesis 2a: Consumers who are prosel self-oriented will have more favorable (a) advertising attitudes, (b) brand attitudes and have higher (c) purchase intentions when a green product whose consumption promotes **strong public self-awareness** than is promoting weak public self-awareness. However,

Hypothesis 2b: For consumers who are prosocial-oriented, (a) advertising attitudes, (b) brand attitudes, and (c) purchase intentions will be consistent regardless of a level of public self-awareness.

Environmental Benefit Distance

The present study focuses on temporal framing of environmental benefits. One way in which temporal framing exerts this influence is by comparing when the outcome of environmental actions would come (Kees, 2011; Strathman, Gleicher, Boninger, & Edwards, 1994). Temporal framing can be represented as a message that focuses on environmental consequences that occur either in the present or in the future. Based on the concept of social dilemmas, protecting the long-term collective welfare often fails because as a rational, self-oriented being, an individual would act primarily to protect his

or her own immediate benefits, regardless of the possible long-term benefits (Biel & Thøgersen, 2007; Dawes, 1980; Parks, 1994). Therefore, society would benefit from a cleaner environment if individuals voluntarily restrain their self-interests and exercise some level of personal restraint to protect the long-term collective welfare. Research on social dilemmas has suggested several ways to facilitate prosocial behaviors. One of ways to elicit prosocial behavior is to visualize the threats to the common interest and to assure outcomes of a prosocial choice that are more visible and proximal (Garling et al., 1999). Individuals are less likely to be cooperative when the outcomes of their cooperative endeavors are uncertain and distant (Hendrickx, Poortinga, & Van der Kooij, 2001).

Given the results from previous studies that have proved the relationship between value orientations and temporal conflict in a social dilemma, the present study assumed that proselfs tend to overlook long-term consequences of environmental behaviors and are more likely to react to immediate, short-term behavioral outcomes. Hence, the study hypothesizes that proselfs tend to be more responsive to a green advertising message that focuses on short-term consequences, bringing immediate benefit to the environment than on those over the long term, bringing future benefits to the environment.

Hypothesis 3: The effects benefit distance of environmental claims in advertising on (a) advertising attitudes, (b) brand attitudes, and (c) purchase intentions will be moderated by consumers' social value orientations. Specifically,

Hypothesis 3a: Consumers who are proself-oriented will have more favorable (a) advertising attitudes, (b) brand attitudes and have higher (c) purchase intentions when a green product whose claim focuses on **immediate benefits** to the

environment than is focusing on future benefit to the environment. However, Hypothesis 3b: For consumers who are prosocial-oriented, (a) advertising attitudes, (b) brand attitudes, and (c) purchase intentions will be consistent regardless of benefit distance of environmental claims in advertising.

Skepticism toward Green Claims in Advertising

As marketers' claims about environmental benefits of products become more pervasive and as consumers' confusion associated with false and misleading claims prevails, consumers receive advertising claims with some degree of skepticism (Albayrak et al., 2011; Baqer, 2011; Mohr et al., 1998; Obermiller et al., 2005; Shrum et al., 1995). Skeptical consumers are less positive in responding to advertising. They like it less, believe it less, and deem it less influential. It is assumed that skepticism toward environmental claims has a certain degree of negative input on green advertising effectiveness (Albayrak, 2011; Mostafa, 2007). While ad skepticism and its negative consequences have numerous empirical findings, skepticism toward environmental claims has received limited academic attention. Based on relatively scarce academic research on skepticism in an environmental context, the study predicts that skepticism toward environmental claims have a negative effect on consumers' attitudes toward green advertising and green purchase intention (Albayrak, 2011; Mostafa, 2007).

Hypothesis 4: Consumers' skepticism toward green claims in green advertising will affect green advertising effectiveness. Specifically,

Hypothesis 4a: Consumers who are skeptical toward a green claim will show less favorable (a) advertising attitudes, (b) brand attitudes, and less likely to (c) purchase a green product than are less skeptical toward a green claim.

In sum, the research seeks to provide a clearer understanding of how consumers' value orientations have an impact on their environmentally significant behaviors. The effects, however, are expected to be moderated by public self-awareness, benefit distance, and skepticism toward green claims. A basic model of how the proposed factors affect one another and corresponding theories can be seen in Figure 1 below.

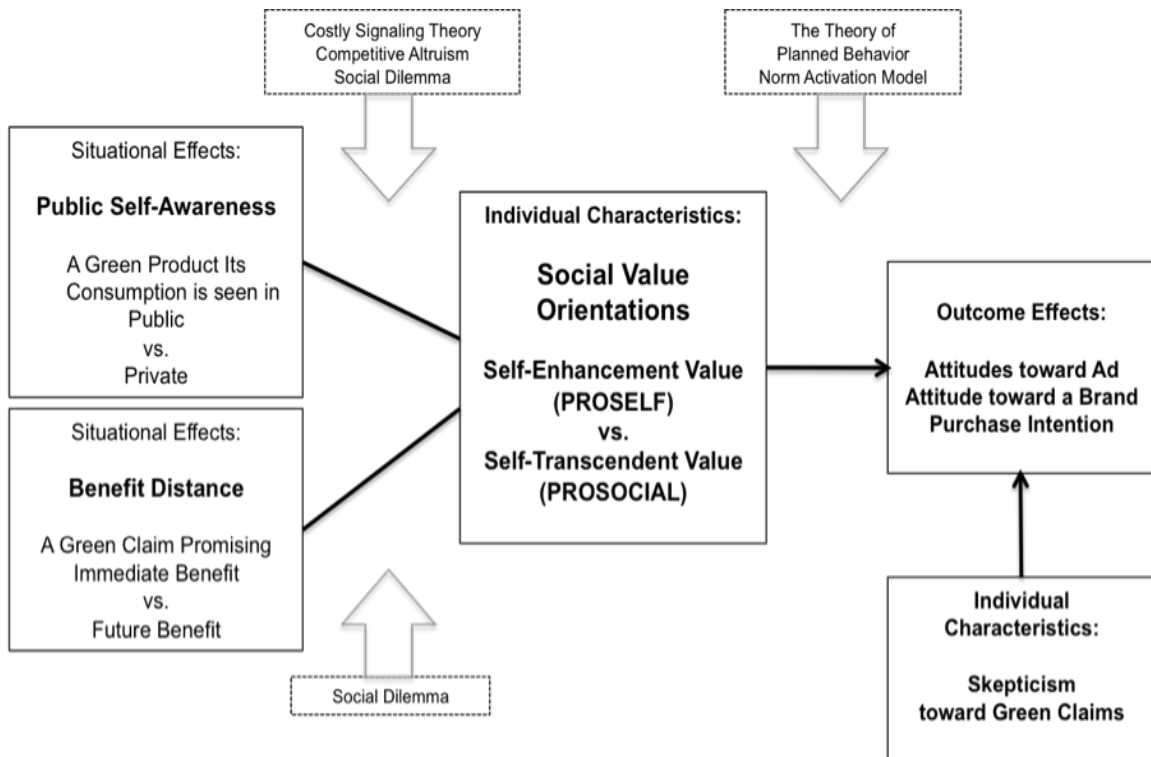


Figure 1. Model of proposed factors and corresponding theories.

CHAPTER III

METHODS

Chapter III presents the research methodology used to test the hypotheses. Specifically, the chapter starts with the introduction of the research method used to address four hypotheses. The first section of this chapter provides the rationale for the use of online experiments. The second section briefly describes the pretest and sample used during the research. In the third section, a detailed description of variables of interests, measurement instruments, and the stimulus materials are provided. In the last section, the main experimental design for the main test is introduced.

Online Experiments

The unique strength of an experiment is in describing “the consequences attributable to deliberately varying a treatment” (Shadish, Cook, & Campbell, 2002, p. 9), also known as casual description. An experiment is an appropriate research method to establish causal description. The researcher can control and manipulate the presentation of the “cause” and thus ensure that it precedes the “effect” (Wimmer & Dominick, 2003). In addition to controlling the cause, the researcher uses the experimental method to control participants, as well as to have control over the selection process, to assign conditions to the control or the experimental group, and to control exposure to experimental treatment. The exploratory nature of the present investigation, hence, fits well with an experiment for the prediction of individuals’ affective, cognitive, and behavioral responses that are expected to be influenced by several variables, including social value orientations, public self-awareness, benefit distance, and skepticism.

The hypotheses were tested using an online experiment. Following Institutional Review Board approval, the researcher partnered with Qualtrics, a research company that specializes in online surveys. Conducting experiments via the Internet brings various benefits to the research (Birnbaum, 2004; Reips & Krantz, 2010). When compared with laboratory research, (a) online experiments are more cost-effective in time, space, and administration, (b) studies can be delivered to large numbers of participants quickly and with low effort, and (c) one can recruit large heterogeneous or homogeneous samples, also of individuals with rare conditions of interest (Mangan & Reips, 2007; Schmidt, 1997). Partnering with a research company enabled the researcher to access random sample from a nationwide population and to enhance the external validity that implies that the cause-and-effect relationship of the study can be generalizable into a different population set.

While an online experiment with a random sample from a nationwide population strengthens the external validity, given the nature of a self-administered online experiment, there may be confounding factors, such as participants' lack of time control, difficulty in understanding instructions, and lack of attention during the experiment that may weaken the internal validity. Potential disadvantages of Internet-based experiments come with the Internet setting and the technologies involved, such as multiple submissions that cause missing representativeness of Internet users, dishonest, or malicious behavior, such as false responses are problematic as considered (Birnbaum, 2004). The internal validity of the study is, however, expected to improve by the researcher's adopting a random sample from Qualtrics and subsequent random assignment. In addition, the Qualtrics panel service had several security measures in

place to secure the internal validity. The Qualtrics prevents multiple registrations from the same computer and prevents a single participant from completing more than one survey every 10 days.

Independent Variables

Social Value Orientations

Measures of value orientations were based on a short version of Schwartz's (1992) value scale and conceived by Stern and colleagues (De Groot & Steg, 2007; Stern et al., 1995; Stern et al., 1998). Stern and colleagues selected 23 values from Schwartz's scale. The short version included values that belong to the self-transcendence versus self-enhancement orientations and the openness to change versus conservation dimensions of Schwartz's value theory. Because the current study presents the self-transcendence (prosocial) versus self-enhancement (proself) dimension, the researcher selected values that belong to the self-transcendence and self-enhancement dimensions only. This selection included 9 value items. The four items that represented the self-transcendence dimension were: (a) a world at peace: free of war and conflict; (b) social justice: correcting injustice, care for the weak; (c) helpfulness: working for the welfare of others, and (d) equity: equal opportunity for all. The five values that represented self-enhancement were (a) wealth: material possession; (b) influence: having an impact on people and events; (c) authority: the right to lead or command; (d) ambition: hard work and aspirations; and (e) social power: control over others and dominance. Respondents rated the importance of these 9 values as "a guiding principle in their lives" on a 9-point scale ranging from 1 = "opposed to my values," to 9 = "extremely important."

Public Self-Awareness

Public self-awareness is referred to as the degree to which an individual's awareness of the self and its actions is evaluated by others (White & Peloza, 2009). Based on the conceptual definition, it is assumed that an individual's public self-awareness is likely to be increased when the self and its actions are publicly identifiable. In contrast, an individual's public self-awareness would be weak when the self and its actions are private. To manipulate public self-awareness into strong and weak in a context of environmentally conscious consumption, the researcher selected a product category in which the products can be consumed either in public or in private. Strong public self-awareness was manipulated with products that are used primarily in public and whose consumption is seen mainly in public. For products that encourage strong public self-awareness, a hybrid vehicle and a portable stainless water bottle were selected. Weak public self-awareness was manipulated with products that are typically used in private and the consumption is rarely seen in public. Then, for products that induce weak public self-awareness, a washing machine and hand soap were selected. Each manipulation had two products that were high- and low-involvement products to control for confounding factors and consumers' perceived involvement. Thus, a total of four products that promoted either strong or weak public self-awareness were used, with a total of eight versions of advertisements designed that had two types of green claims that focused on either an immediate or future benefit to the environment (Appendix A).

Benefit Distance

Benefit distance of a green product was manipulated in the advertisement by varying the time required to donate a certain percent of profits to environmental

organizations. Green claims in the stimulus advertisements were framed into immediate environmental benefits versus future environmental benefits. Green messages that focused on immediate benefits highlighted that the environmental benefit of purchasing the green product would be realized immediately. For example, the claim that focused on immediate benefits to the environment was presented as, “As a member of 1% FOR THE PLANET, *every day* we donate 1% of sales to American Water Works Associations for *each Triton we sold.*” In contrast, messages that focused on future benefits to the environment highlighted that the actual benefits of purchasing the green product would be realized in the future. The future benefit claim was presented as, “As a member of 1% FOR THE PLANET, we’ve donated *1% of annual sales* to American Water Works Associations.” All claims, except the testing claims, were identical to avoid one claim’s dominating the others across all versions of an advertisement (See Appendix A).

Skepticism toward Green Claims

The present study presented a 4-item measure of skepticism toward environmental claims made in advertising and on packages based on Mohr et al.’s (1998) study. While Obermiller and Spangenberg (1998) developed the measures for skepticism toward advertising in general, Mohr et al. (1998) developed specific measures for skepticism toward green claims on advertising or product packages. Skepticism measure for the current study was rated on a 5-point Likert scale. Statements included, “Most environmental claims made on package labels or in advertising are true,” “Because environmental claims are exaggerated, consumers would be better off if such claims on package labels or in advertising were eliminated,” “Most environmental claims on package labels or in advertising are intended to mislead rather than to inform consumers,”

and, “I don’t believe most environmental claims made on package labels or in advertising.”

Stimulus Advertising and Green Claims

To control for respondents’ previous brand experience and perception toward a specific brand name, a new brand name, Triton, was created for the present research. The brand name was identical across eight versions of stimulus advertisement. General ad claims, except the testing claim, also are identical across all stimulus ad materials to control for possible confounding variables (Appendix B). Figure 2 is an example of one of the eight versions of the stimulus ad. The ad presented the condition that was manipulated with an immediate benefit to the environment and weak public self-awareness.

Pretest

First, to simulate the experience of reading advertisements on a computer screen, to check the reliability of the questionnaires for the main experiment, to determine whether subjects reported a difference in the two types of message appeals and to check whether subjects reported a difference in the two types of product category promoting different level of public self-awareness, the researcher conducted a pretest. Pretest participants were recruited through the Qualtrics. The Qualtrics panel service provides a subject pool registered to participate in Internet-based research in exchange for compensation. An individual who had purchased any type of environmentally friendly products during the previous 6 months and ages from 18 to 64 were qualified to participate in the pretest. In order to prevent potential confounding factors involved in Internet-based experiment, the Qualtrics panel service had several security measures in

place for its panel of participants, such as preventing multiple registrations from the same computer. It also prevented a single participant from completing more than one survey every 10 days.

TRITON

As a member of **1% FOR THE PLANET**, every day we donate 1% of sales to American Water Works Association for each Triton we sell.

Energy Star washing machine: Save up to \$800 on electricity per year.

Dry sensor system: Dryer will automatically stop when clothes are completely dry.

Coldwash technology: Uses cold water and enhanced washing motions to penetrate deep into fabrics, giving you cold water savings with warm water performance.

Recyclable: 85% of raw material used to manufacture Triton is recyclable.

Brand name, Triton, and overall creative themes are identical across 8 versions of the ad

Weak public self-awareness: A washer, used in private and its consumption is not seen in public

Benefit distance: Immediate benefit to the environment

Environmental claims for general information regarding benefit to the environment are identical across 8 versions of the ad

Figure 2. Sample stimulus advertisements, including testing treatments.

Procedure

A total of 105 participants took part in the study; however, five participants who failed to complete the questions and their responses were removed from pretest analysis.

Therefore, 100 participants who complete the questions were included, and their responses were valid for the pretest. The pretest was conducted on the Qualtrics site. On the first page of the questionnaire, participants were told that the purpose of the research was to evaluate different executions of advertisements. On the second page, the participants were asked to rate 9 values that represented either self-transcendence or self-enhancement, on a scale from 1 to 9.

Second, to check reliability of measurements for skepticism, the participants were asked to state to what extent they agree or disagree with the statement regarding skepticism toward green claims in advertising. Third, two executions of stimulus ad that were framed with testing green claims were presented for manipulation check. After reading the ads, the participants were asked to evaluate when they expected the environmental benefits would be realized, on a 5-point semantic differential scale composed of immediate benefit/future benefit, where 1 indicated “immediate benefit” and 5 indicated “future benefit.”

Last, to select an appropriate product category that fits well with a manipulation of strong and weak public self-awareness, participants were asked to rate to what extent they believe the products listed would be used primarily in public or in private on a 4-point semantic differential scale composed of mainly private/mainly in public, where 1 indicated “mainly in private” and 4 indicated “mainly in public” (Appendix C).

Manipulation Checks

Social value orientations. To ensure that social value orientations were divided into two groups, the researcher calculated mean scores for both self-enhancement and self-transcendent-oriented groups (Tangari, Folse, Burton, & Kees, 2010). Participants

were categorized as proselfs if their mean scores for the items that represented self-enhancement values (wealth, influence, authority, social power, and ambition) were greater than their mean scores for both self-transcendence and self-enhancement values. The same logic was applied to categorize prosocials. If average mean scores for assessing self-transcendence values (world peace, social justice, helpfulness, and equality) were greater than the mean score for both self-transcendence and self-enhancement values, it was assumed that the participant was prosocial-oriented. Using this procedure, the researcher classified 57 respondents as prosocials and 43 as proselfs. Although a slightly higher number of respondents were classified as prosocials, given the small difference between two groups, it was presumed that the split for social value orientations worked as intended.

The practice of dichotomization of predictor variables, converting a continuous variable to a categorical variable by splitting the scale at some point and designating individuals above and below that point as defining two separate groups, has been often used in social psychology and consumer research (MacCallum, Zhang, Preacher, & Ducker, 2002; Maxwell & Delaney, 1993). Several researchers cautioned that the use of dichotomization might reduce the statistical power and underestimate the relationship to dependent variables (MacCallum et al., 2002; Maxwell & Delaney, 1993; Irwin & McClelland, 2001, 2003).

Although there exist potential negative consequences associated with dichotomization, possible justifications are drawn from discussions in previous studies. The first justification is that dichotomization makes the analysis simple. Because the purpose of the study is to compare two groups with different social value orientations,

comparing two groups using analysis of variance with dichotomized independent variable makes the analysis simple rather than an analysis using continuous independent variables with regression/correlation methods (McCallum et al., 2002). Second, previous studies with continuous individual-differences measures as an independent variable, often converted the independent variable into a dichotomous variable by splitting the scale at some point and designating individuals above and below that point as defining two or more separate groups (Irwin & McClelland, 2001, 2003; Maxwell & Delaney, 1993) for group comparison. For instance, the consideration of future consequences (CFC), an individual differences measure, has been dichotomized as two distinct groups (future- and present-oriented individuals) for comparison in experiments (Starthman, Gleicher, Boninger, & Edwards, 1994; Tangari et al., 2010). Last, it is empirically proved that social value orientations and measurement scales developed by Schwartz (1992) have distinct four clusters, including openness to change, conservation, self-transcendence, and self-enhancement (De Groot & Steg, 2007; Schwartz, 1992; Stern et al., 1998; Stern et al., 1995). The present study selected value items exclusively representing self-transcendence and self-enhancement for measuring individual differences reflecting prosocial and proself orientations. Thus, it is assumed that dichotomization of value orientations would not distort the information about individual differences.

In order to ensure the split was successful, a paired sample *t*-test was conducted and confirmed that respondents classified as prosocials had mean scores of 7.96, and the score was significantly different than average mean scores of measures for value orientations ($M = 6.12$, $t = 22.16$, $p < .01$). In addition, mean scores of proselfs were 6.81 and the score was significantly different than average scores of measures for value

orientations ($M = 6.53, t = 9.02, p < .01$). Thus, the scores indicated that there were significant differences between prosocials and proselfs.

Public self-awareness. Public self-awareness was manipulated with a product category. Strong public self-awareness is operated with products that are used mainly in public, and weak public self-awareness was operated with products that are used mainly in private. To test the efficacy of public self-awareness, a paired sample t -test was run to compare participants' responses to a question of what extent to which those products differ in their primary usage. As anticipated, a hybrid car ($M_{\text{hybrid}} = 3.39, SD = .95$) was considered a product used primarily in public, as opposed to a washing machine ($M_{\text{washer}} = 1.62, SD = .94$) ($t = 12.16, p < .01$), which is used mainly in private. Additionally, a portable stainless water bottle ($M_{\text{bottle}} = 2.70, SD = .98$) was reported as a product that was used in public more often than was hand soap ($M_{\text{soap}} = 1.94, SD = 1.01$) ($t = 5.80, p < .01$).

Benefit distance. Benefit distance was manipulated with green claims in advertising. Green claims in the stimulus advertisements were framed into immediate environmental benefits versus future environmental benefits. To ensure that the two temporal framing manipulations operated as intended, a paired-sample t -test was run to compare mean scores of responses of questions asking how soon the environmental benefit involved in product consumption would come. The test result confirmed that participants responded that the immediate-benefit green claim promised more immediate benefits to the environment ($M_{\text{immediate}} = 2.70, SD = 1.42$) than did the future-benefit focused claim ($M_{\text{future}} = 3.96, SD = 1.11$) ($t = 7.32, p < .01$). In addition,

Skepticism toward green claims. To check the internal consistency of items for measuring skepticism, the researcher ran a reliability analysis using Cronbach's α . The alpha score was .66. To increase the internal consistency, the researcher excluded the first item, "Most environmental claims made on package labels or in advertising are true." The Cronbach's α of three items for the skepticism measure was .80, which exceeded the general acceptability guideline of .70 (Hair, Black, Babin, Anderson, & Tatham, 2005).

In sum, the pretest confirmed that respondents' social value orientations were equally divided into proselfs and prosocials as intended and the manipulation for public self-awareness and benefit distance of environmental claims appeared to be successful. In addition, Cronbach's α of skepticism indicated that measures for skepticism are reliable.

Main Experiment

Research Design

The experiment is a 2 (social value orientations: proself vs. prosocial) x 2 (public self-awareness: strong vs. weak public self-awareness) x 2 (benefit distance: immediate vs. future benefit to the environment) between-subjects design. Social value orientation, however, was not deliberately manipulated into two dimensions because the concept of social value orientation is considered a personal trait. Instead, participants were categorized as self-transcendent or self-enhancement, based on the mean scores after the experiment ended. The use of dichotomization of social value orientations for the study is acceptable because (1) it enables simplified analysis for comparing two groups of individuals (McCallum et al., 2002), (2) it has been empirically proved in previous

studies (De Groot & Steg, 2007; Schwartz, 1992; Stern et al., 1998; Stern et al., 1995; Starthman et al., 1994; Tangari et al., 2010), and (3) social value orientations and subsequent measurement scales used in the present study have two clusters reflecting self-transcendent and self-enhancement values (De Groot & Steg, 2007; Schwartz, 1992; Stern et al., 1998; Stern et al., 1995). Thus, four online experimental conditions were created.

Stimulus Materials

For advertising stimuli, four green products that promoted either strong or weak public self-awareness were used, with a total of eight versions of an advertisement. The testing claim in the ad was framed into two versions: immediate environmental benefits and future environmental benefits to the environment. The products used in this study were a hybrid car, portable stainless water bottle, washing machine, and hand soap. They were chosen based on the pretest indicating that consumers reported differences between the usages of the products, depending on whether they are used mainly in public or in private and whether the products are distinctly different in terms of consumers' perceived involvement. In each experimental condition, two advertisements for both high- and low-involvement products were presented to control for a confounding variable, consumers' perceived involvement. To balance between conditions and control for possible confounds, overall executions of the ads were the same, with the exception of the testing claim and featured products (Appendix B).

Procedure

The researcher recruited participants for the main experiment through the Qualtrics panel service. Partnering with the research company allowed the researcher to

access a random sample of a nationwide population. Respondents have registered with Qualtrics to participate in the experiment in exchange for compensation. In order to prevent potential drawbacks comes with the Internet setting and the technologies involved, such as multiple submissions, the Qualtrics panel service had several security measures in place for its panel of participants. Also, the Qualtrics panel service prevents multiple registrations from the same computer and prevents a single participant from completing more than one survey every 10 days.

Individuals who had purchased any type of environmentally friendly products during the previous 6 months and ages from 18 to 64 were qualified to participate in the main experiment. The main experiment was conducted at the Qualtrics site, where participants were told that the purpose of the study was to pilot-test a green product and advertising campaign before launching the brand in the market. Participants were also informed that basic demographic questions would be asked at the end of the study but that it was not mandatory that they answer the questions. Once agreed, participants took part in the main experiment. A total of 466 participants who said they had bought some type of environmentally friendly product in the previous 6 months entered into the experiment. Among 466 participants, 64 participants and their subsequent responses discarded because they have not completed the questions. Finally, 402 participants and their responses took part in the main experiment.

These 402 subjects were randomly assigned to one of four experimental conditions that included the measures of value orientations, skepticism, and two ad stimuli that were randomly assigned. Each condition started with the questions regarding participants' social value orientations based on Schwartz's nine values, representing

either self-transcendence or self-enhancement. Participants were asked to read a list of nine values and to rate each value statement, using a 9-point scale, where 1 represented “opposed to my value,” and 9 represented “extremely important value” as a guiding principle. After completing the measures for value orientation, the participants were asked to state their level of skepticism toward green claims in advertising or on a product package.

On a 5-point Likert scale, participants read three items of skepticism measure (one item was excluded due to its causing low internal consistency), including, “Because environmental claims are exaggerated, consumers would be better off if such claims on package labels or in advertising were eliminated,” “Most environmental claims on package labels or in advertising are intended to mislead rather than to inform consumers,” and, “I don’t believe most environmental claims made on package labels or in advertising.”

After the measures for skepticism were completed, a set of two advertisements was presented (one for high perceived involvement product and another for low perceived involvement product) to control for consumers’ perceived involvement. The instruction informed participants to read the ad as they would read a magazine or newspaper advertisement before proceeding to the next page. At the end of each ad, participants were asked to evaluate the ad and the featured product, and finally were asked to express their interest in purchasing the product described in the ad. The last part of the experiment consisted of questions that asked participants’ demographic profiles, including gender, age, ethnic background, and level education they had completed (Appendix D).

Dependent Measures

The dependent variables for this study were measured, using the aforementioned post-test questionnaire across a variety of validated question scales, which included semantic differential items and Likert-scale items. Following participants' exposure to the experiment stimuli, they self-reported their preference of advertising presented, the brand featured in the ad, and overall intention to purchase the product (Appendix D).

Advertising Attitudes

The first dependent variable, attitude toward advertising, was defined in terms of participants' overall evaluation of the ad and was measured with the statement, "Please indicate how you felt about the ad in general" on a 5-point semantic differential scale composed of good/bad, pleasant/unpleasant, and favorable/unfavorable. These three responses were presented based on previous literature that has examined attitude toward the ads (Davis, 1995).

Brand Attitudes

The second dependent variable was attitude toward a brand, which was defined in terms of subjects' overall evaluation of the brand. This was measured with a 3-item, 5-point semantic differential scale based on the previous literature that has measured attitude toward the brand (Keller, 1993). The statement "Please rate your overall feelings about using the brand" was followed by three bipolar adjectives: good/bad, pleasant/unpleasant, and favorable/unfavorable.

Purchase Intention

The third dependent variable, purchase intention, was defined as participants' expressed interest in buying the product or service. Purchase intention was measured

with a 3-item, 5-point Likert scale that ranged from 1 = strongly disagree to 5 = strongly agree (Putrevu & Lord, 1994). The statements included, “It is very likely that I will switch to the product that is advertised,” “I will purchase the featured product the next time I need it,” and “I will try the product featured in the ad.”

Given a high coefficient α for each set of scales (advertising attitude, $\alpha = .93$, brand attitude, $\alpha = .93$, and purchase intention, $\alpha = .84$), an overall score was computed for each measure by averaging the three component scales.

CHAPTER IV

RESULTS

Chapter IV presents the results of the statistical tests used to answer the hypotheses discussed in the previous chapters. The first section of this chapter provides the brief demographic profiles of the participants who took part in the main experiment. The second section presents statistical analyses used in the study and provides a rationale for the appropriateness of the selected statistical analysis to answer hypotheses. The third section reports the results of the statistical tests. The last section presents a summary of the results and an evaluation of whether the proposed hypotheses are properly supported.

Participants' Profiles

Participants for the experimental research were recruited through the Qualtric panel service. A total of 402 participants took part in the main experiment (Table 1). Because participants had a right to skip questions regarding their demographic information, the total number of responses to the demographic questions was not necessarily equal to the sample size. The sample consisted of 202 women (50.9%), 195 men (49.1%). In terms of age, 34.6% of respondents ($n = 139$) were between the ages of 55 and 64 years, followed by the ages of 45–54 (25.4%, $n = 102$), the ages of 25–34 (18.2%, $n = 73$), the ages of 35–44 (13.5%, $n = 54$), and the ages of 18–24 years (8.2%, $n = 33$). In terms of ethnicity, the majority of the sample was Caucasian (83.3%, $n = 330$), followed by African American (6.8%, $n = 27$), Asian or Pacific Islander (3.8%, $n = 15$), Hispanic (3.3%, $n = 13$), and Native Americans and others (1.5%, $n = 6$). In terms of education, the majority of participants reported that the highest level of education they

had completed was some college (31.4%, $n = 126$), followed by a 4- year college degree (22.9%, $n = 92$), a 2-year college degree (17.2%, $n = 69$), and a high school degree (17.5%, $n = 70$).

Table 1

Demographic Characteristics of Participants (N = 402)

Characteristic	<i>n</i>	Valid %
Gender		
Men	195	49
Women	202	51
Age (years)		
18-24	33	8
25-34	73	18
35-44	54	14
45-54	102	25
55-64	139	35
Highest education level completed		
Less than high school	4	1
High school	70	18
Some college	126	31
2-year college degree	69	17
4-year college degree	92	23
Master's degree	27	7
Doctoral degree	5	1
Professional degree (JD, MD)	8	2
Ethnicity		
American Indian or Alaskan Native	6	2
African American	27	7
Asian, Asian American, or Pacific Islander	15	4
Hispanic	13	3
Caucasian	330	83
Other	5	1

Note. Totals of numbers are not 402 for every characteristic because of missing responses.

The participants can be compared with U.S. demographics of 2010 (U.S. Census Bureau, 2008) to see if the study can be generalizable. Ages from 18 to 44 appears to be fairly representative of US demographics where the ages of 18 – 24 were 9.9%, the ages of 25 – 34 were 13.5% and the ages of 35 – 44 were 13.3%. However, ages from 45 to 64 are slightly over-sampled in the study. Possible reasons behind the over-sample size of this age group is because the age group of 45 to 64 who registered in the Qualtrics panel service have passed the screening question of “have you purchased an environmentally friendly product in the last 6 months?” more than did the younger age groups.

Manipulation Checks

A set of measures for participants’ social value orientations was collected before participants were exposed to experimental treatments. A total of 402 participants were divided into two groups, proself-oriented and prosocial-oriented, based on their mean scores on measures for value orientation. Participants were categorized as proselfs if their mean scores for the items representing self-enhancement values (wealth, influence, authority, social power, and ambition) were greater than their mean scores for both self-transcendence and self-enhancement values. Participants were considered prosocials if their mean scores for self-transcendence values (world peace, social justice, helpfulness, and equality) were greater than the mean scores for both self-transcendence and self-enhancement values. Using this procedure, 191 respondents were classified as proselfs and 211 were classified as prosocials. A paired sample *t*-test confirmed that respondents who were classified as proselfs had a mean score of 6.06, and the score was significantly different from the average scores of value orientations ($M = 6.56, t = 8.31, p < .01$). In

addition, the mean score for prosocials was 7.41, and the score was significantly different from the average scores of value orientations ($M = 6.46$, $t = 12.26$, $p < 01$). The result of the t -test indicated that proselves and prosocials are significantly different in their mean scores; thus, it is assumed that two groups are different in terms of their value orientations.

After social value orientations were measured, a set of measures for participants' skepticism toward green claims in advertising was collected. A set of three items for measuring skepticism underwent a reliability analysis, using Cronbach's α , and the score was $\alpha = .80$, which exceeded the general acceptable level of .70 (Hair et al., 2005).

In the post-test questionnaire, a set of dependent measures was collected, including attitude toward the advertisement to which participants were being exposed, attitude toward a brand featured in the ad, and purchase intention of featured products in the ad. As with the skepticism measures, composite measures were created, and all scales underwent a reliability analysis, using Cronbach's α . Reliability analysis showed that advertising attitude ($\alpha = .93$), brand attitude ($\alpha = .93$), and purchase intention ($\alpha = .84$) were above the general acceptable level of .70 (Hair et al., 2005).

Statistical Tests

As stated in the previous chapter, the purpose of the study was to examine whether consumers' value orientations have an influence on their responses to green advertising and green product consumption and to determine how skepticism toward a green claim in advertising would influence consumers' attitudinal and behavioral responses. Given the main purpose, the researcher adopted multivariate analysis of covariance (MANCOVA) as the main statistical test.

As the study compares the effect of independent variables' being manipulated at two levels, a between-subject design was chosen to best isolate the variables of interest. In choosing this design, the researcher had a clearer picture of the actual treatment effects (Hair et al., 2005). There were several gains from the use of multivariate analysis of variance (MANOVA) rather than the use of separate univariate analyses of variance (ANOVA) or *t*-tests. Running a series of separate ANOVAs may increase Type I errors, resulting in a loss of control of the experiment-wide error rate (Hair et al., 2005). In addition, MANOVA is useful when handling multiple dependent measures simultaneously, especially when dependent variables are theoretically and statistically correlated (Table 2). Even when the number of dependent variables is 5 or fewer, the statistical power of the MANOVA tests exceeded that obtained with a single ANOVA (Hair et al., 2005). Given the assumption that consumers' skepticism toward a green claim in advertising would influence their responses to green advertising and intentions to purchase the product, the analysis includes skepticism as a covariate.

Table 2

Means, Standard Deviations, and Intercorrelations for Advertising Attitude, Brand Attitude, and Purchase Intention

Measure	M	SD	1	2	3
(a) Advertising Attitude	3.89	.76	—		
(b) Brand Attitude	3.88	.74	.89**	—	
(c) Purchase Intention	3.46	.64	.60**	.61**	—

Note. * $p < .05$, ** $p < .01$, *** $p < .001$

Assumptions for MANCOVA

There is a set of criteria and multivariate test procedures of MANOVA and MANCOVA to be statistically robust (Hair et al., 2005). To ensure the validity of multivariate statistical tests, (a) the observation must be independent, (b) variance-covariance matrices must be equal (or comparable) for all treatment groups, and (c) the set of dependent variables must follow a multivariate normal distribution. An additional requirement for use of an analysis of covariance is that the covariate must have some relationship with the dependent variable. This section reviews each criterion to ensure the validity of MANOVA and MANCOVA.

Independence. First, independence is the most critical assumption of MANOVA. The independent observation requires that the dependent measures for each respondent be totally uncorrelated with the responses from other respondents in the sample (Hair et al., 2005). A violation of the assumption often occurs when measures are taken over time, or when measures are gathered in a group setting where a common confounding experience such as noise or confusion of instruction causes a violation of an independent observation (Hair et al., 2005). For the present study, the first assumption was met by the random assignment of participants into one of four experimental conditions. Each condition has either proself or prosocial-oriented groups with an experimental treatment of two levels of message framing with benefit distance, coupled with two levels of public self-awareness (Table 3). In addition, recruitment from a nationwide subject pool and completely anonymous participation in an online setting would prevent violation of the first assumption.

Table 3

Distribution of Subjects by Experiment Condition (N = 402)

Group	Social Value Orientation and Framing Condition	<i>n</i>	%
Proself			
1	Strong PSA with Immediate Benefits to the Environment	53	13
2	Strong PSA with Future Benefits to the Environment	50	12
3	Weak PSA with Immediate Benefits to the Environment	45	11
4	Weak PSA with Future Benefits to the Environment	43	11
		191	47.5
Prosocial			
1	Strong PSA with Immediate Benefits to the Environment	47	12
2	Strong PSA with Future Benefits to the Environment	51	13
3	Weak PSA with Immediate Benefits to the Environment	55	14
4	Weak PSA with Future Benefits to the Environment	58	15
		211	52.5
	Total	402	100

Note. PSA = public self-awareness.

Homogeneity of variance / covariance matrices. The second assumption of MANOVA is the equivalence of covariance matrices across the groups. MANOVA programs conduct the test for equality of covariance matrices, typically the Box's *M* test, and provide significance levels for the test statistics. The results of the Box's *M* test did not support the equality of the covariance matrices ($p = .003$), indicating that the groups were deemed to be different and the assumption was violated. According to Hair et al. (2005), a violation of the equivalence of covariance matrices across the groups has minimal impact when the groups are of approximately equal size (i.e., largest group size / smallest group size < 1.5). Given that the largest group size is 58 and the smallest group size is 43, the study assumed that the violation of this assumption could be mitigated.

Normality. The third assumption for MANOVA pertains to normality of the dependent measures. To determine that dependent variables indeed have normal

distribution, all dependent variables were evaluated for skewness. Skewness is used to describe the balance of the distribution, which is, whether the distribution is balanced, symmetrical, and approximately the same shape on both sides. The skewness of a normal distribution is given values of zero. For the present study, the researcher evaluated the normal distribution test for three sets of dependent variables: green advertising attitude, green brand attitude, and purchase intention of a green product featured in the ads.

The attitude toward the ad was negatively skewed to a minimal degree (skewness = $-.24$), attitude toward a brand was negatively skewed (skewness = $-.38$), as was purchase intention (skewness = $-.35$), indicating that participants were slightly positively inclined to indicate their attitudes toward ad, brand, and intentions to purchase a product. Hair et al. (2005) stated that, unless the sample size is less than 30, significant departures from normality can have a substantial impact on the results. Because the sample size for the present study was 402, the effect of negatively skewness that ranged from $-.38$ to $-.24$ may be negligible. Moreover, given that no skewness scores were in excess of $+1.0$ or -1.0 , it can be confirmed that the data were normally distributed (Leech, Barrett, & Morgan, 2008).

Evaluating skepticism as a covariate. The fourth assumption is related to selecting covariates. An effective covariate is one that must have some relationship (correlation) with the dependent variables. The covariate, skepticism toward green claims in advertising, and three sets of dependent variables were in correlation analysis. The Pearson correlation was conducted to measure the size of an effect. As shown in Table 4, significant negative correlations were found with skepticism toward green claims in advertising and advertising attitude ($r = -.34, p < .01$), brand attitude ($r = -.31,$

$p < .01$), and purchase intention ($r = -.23, p < .01$), indicating that skepticism toward green claims in advertising is considered as an effective covariate. Hence, the study incorporated consumers' skepticism toward green claims in advertising as a covariate in the analysis.

Table 4

Intercorrelations for Skepticism toward Green Claims, Advertising Attitude, Brand Attitude, and Purchase Intention

Measure	Skepticism	(a)	(b)	(c)
Skepticism toward Green Claims	–			
(a) Advertising Attitude	-.34**	–		
(b) Brand Attitude	-.31**	.89**	–	
(c) Purchase Intention	-.23**	.60**	.61**	–

Note. * $p < .05$, ** $p < .01$, *** $p < .001$

Tests of Hypotheses

Hypothesis 1

The main object of the study is to investigate the effects of consumers' value orientations on green advertising effectiveness. Hypothesis 1 predicted that there was a main effect of social value orientations on consumers' advertising attitude and brand attitude and purchase intentions. Specifically, Hypothesis 1a predicted that consumers who are prosocial-oriented are likely to respond more positively to a green advertising and a green product than would consumers who are proselfs.

Hypothesis 1: Consumers' social value orientations will affect (a) advertising attitudes, (b) brand attitudes, and (c) purchase intentions. Specifically,

Hypothesis 1a: Consumers who are prosocial-oriented will have (a) more positive advertising attitudes, (b) more positive brand attitudes, and (c) higher purchase intentions than will consumers who are proself-oriented.

To test Hypothesis 1 and 1a, the 2 (social value orientations: proself vs. prosocial) x 2 (public self-awareness: strong vs. weak public self-awareness) x 2 (benefit distance: immediate vs. future benefit to the environment) between-subject MANCOVA was run with advertising attitude, brand attitude, and purchase intention as dependent variables and skepticism toward a green claim as a covariate. As shown in Table 5, the analysis confirmed that consumers' social value orientations have a significant effect on their (a) advertising attitudes, (b) brand attitudes, and (c) purchase intentions (Wilks's $\lambda = .97, p < .01$).

Table 5

Multivariate and Univariate Analyses of Covariance

Variable	MANCOVA <i>F</i> (3, 391)	ANOVA <i>F</i> (1, 393)		
		Advertising Attitudes	Brand Attitudes	Purchase Intentions
Social Value Orientations	.97**	13.01***	9.38**	5.36*
Public Self- Awareness	.98*	2.74	.82	7.28**
Benefit Distance	1.00	.19	.00	.23
SVO x Public Self- Awareness	.95***	9.87**	7.25**	17.66***

Table 5 (continued)

Variable	MANCOVA <i>F</i> (3, 391)	ANOVA <i>F</i> (1, 393)		
		Advertising Attitudes	Brand Attitudes	Purchase Intentions
SVO x Benefit Distance	.99	.04	.68	.11
Public Self- Awareness x Benefit Distance	1.00	.76	.34	.02
SVO x Public Self Awareness x Benefit Distance	1.00	.65	.03	.03
Skepticism	.89***	47.99***	38.50***	26.16***

Note. *F* ratios are Wilks' approximation of *F*. ANOVA = univariate analysis of variance; MANOVA = multivariate analysis of variance; SVO = Social Value Orientations.

* $p < .05$, ** $p < .01$, *** $p < .001$

Specifically, as shown in Table 5 and Table 6, participants classified as prosocials showed more favorable (a) attitudes toward the ad ($F(1, 393) = 13.01, p < .01$), more favorable (b) attitudes toward the brand featured in the ad ($F(1, 393) = 9.38, p < .01$), and more positive (c) intention to purchase the product ($F(1, 393) = 5.36, p < .05$) than did participants who were classified as proselves. As the results confirmed, Hypothesis 1 and 1a were supported, indicating that there is a main effect of social value orientations on consumers' responses to advertising attitudes, brand attitudes, and purchase intentions. Compared to proselves, prosocials are more likely to show favorable attitudes toward green advertising and brands as well as show greater purchase intentions.

Table 6

Means and Standard Deviations for Advertising Attitude, Brand Attitude, and Purchase Intention in Proself and Prosocial Groups

Social Value Orientation	Advertising Attitude		Brand Attitude		Purchase Intention	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
Proself	3.72	.76	3.72	.75	3.36	.67
Prosocial	4.06	.72	4.02	.71	3.55	.59

Hypothesis 2

Hypothesis 2 predicted that public self-awareness driven by green product consumption would moderate the effect of social value orientations on attitudinal and behavioral responses.

Hypothesis 2: The effects public self-awareness on (a) advertising attitudes, (b) brand attitudes, and (c) purchase intentions will be moderated by consumers' social value orientations.

A MANCOVA was conducted to assess the interaction effects between social value orientations and public self-awareness on (a) advertising attitudes, (b) brand attitudes, and (c) purchase intentions. As shown in Table 5, the MANCOVA confirmed that there was a significant interaction effect between social value orientations and public self-awareness on consumers' attitudinal and behavioral responses (Wilks's $\lambda = .95, p < .01$). Specifically, the interaction of social value orientations and public self-awareness provided a significant contribution to consumers' (a) advertising attitudes ($F(1, 393) = 9.87, p < .01$), brand attitudes ($F(1, 393) = 7.25, p < .01$), and behavioral responses ($F(1,$

393) = 17.66, $p < .01$). As the result of Hypothesis 2 indicated, consumers' value orientations and their responses to green advertising and a green product depend on a level of public self-awareness. Hence, Hypothesis 2 was supported.

Hypothesis 2a questioned which level of public self-awareness is more effective in terms of eliciting favorable advertising attitudes, brand attitudes, and purchase intention from proself-oriented consumers. While proself-oriented consumers generally show less positive attitudes toward green advertising and are less likely to purchase a green product than do prosocials, when its consumption promotes strong self-awareness, in other words, its consumption is seen by others in public, their attitudes and behavioral intentions would be changed in a more positive direction.

Hypothesis 2a: Consumers who are proself-oriented will have more favorable (a) advertising attitudes, (b) brand attitudes and have higher (c) purchase intentions when a green product whose consumption promotes **strong public self-awareness** than is promoting weak public self-awareness.

A follow-up MANCOVA was conducted to examine responses from each group of consumers separately. First, as shown in Table 7, for the proself group ($n = 191$), the analysis confirmed that public self-awareness had a significant influence on green advertising effectiveness (Wilks's $\lambda = .90$, $p < .01$). Specifically, public self-awareness had an influence on consumers' (a) advertising attitude ($F(1, 186) = 8.29$, $p < .01$), (b) brand attitude ($F(1, 186) = 4.84$, $p < .05$) and (c) purchase intentions ($F(1, 186) = 18.76$, $p < .01$).

Table 7

Multivariate and Univariate Analyses of Covariance in Proself Group (n = 191)

Variable	MANCOVA <i>F</i> (3, 184)	ANOVA <i>F</i> (1, 186)		
		Advertising Attitudes	Brand Attitudes	Purchase Intentions
Public Self-Awareness	.90***	8.29**	4.84*	18.76***
Benefit Distance	1.00	.02	.26	.27
Public Self-Awareness x Benefit Distance	1.00	.00	.06	.03

Note. *F* ratios are Wilks' approximation of *F*. ANOVA = univariate analysis of variance; MANOVA = multivariate analysis of variance.

p* < .05, *p* < .01, ****p* < .001

Second, unlike proselfs, Hypothesis 2b predicted that prosocial consumers' responses would not be affected by public self-awareness.

Hypothesis 2b: For consumers who are prosocial-oriented, (a) advertising attitudes, (b) brand attitudes, and (c) purchase intentions will be consistent regardless of a level of public self-awareness.

The MANCOVA confirmed that for the prosocial group (*n* = 211), public self-awareness (Wilks's $\lambda = .99$, *p* = .53) did not moderate responses to (a) advertising attitudes, (b) brand attitudes, and (c) purchase intentions, indicating that prosocials were equally positive toward green advertising and a subsequent green product regardless of its level of public self-awareness. As the results indicated, Hypothesis 2b was supported.

As shown in Table 8, descriptive analysis confirmed that proself-oriented consumers showed more favorable advertising attitude, brand attitude, and a greater

propensity to engage in purchase when they are in strong public self-awareness condition, indicating that when a green product and its consumption is mostly seen by others in public, proselves tend to be more responsive to green advertising and a green product. In contrast, prosocial-oriented consumers did not show significant difference in their attitudinal and behavioral responses regardless of the level of public self-awareness. As the results indicated, Hypothesis 2a and 2b were supported.

Table 8

Means and Standard Deviations for Advertising Attitude, Brand Attitude, and Purchase Intention in Each Experimental Condition

Social Value Orientations and Public Self-Awareness	<i>n</i>	Advertising Attitude		Brand Attitude		Purchase Intention	
		<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
Proself							
Strong PSA: Used in Public	103	3.82	.77	3.79	.78	3.52	.70
Weak PSA: Used in Private	88	3.61	.73	3.65	.71	3.18	.60
Prosocial							
Strong PSA: Used in Public	98	4.01	.71	3.96	.65	3.51	.59
Weak PSA: Used in Private	113	4.10	.73	4.06	.75	3.58	.59

Note. PSA = public self-awareness.

As the results from Hypothesis 2, 2a, and 2b revealed, the interaction effect between public self-awareness and social value orientations was significant across all dependent variables, indicating that public self-awareness provided a significant contribution to the social value orientation and its effect on (a) advertising attitudes, (b) brand attitudes, and (c) purchase intentions. Figures 3, 4, and 5 visualize the interaction

effects. Figure 3 shows the interaction effect between social value orientations and public self-awareness on advertising attitude. Prosocials showed more favorable attitudes toward advertising, regardless of whether a green product in the ad was being used in public or in private. In contrast, proselves had more favorable attitudes toward advertising if the green product and its consumption is seen mainly in public than in private.

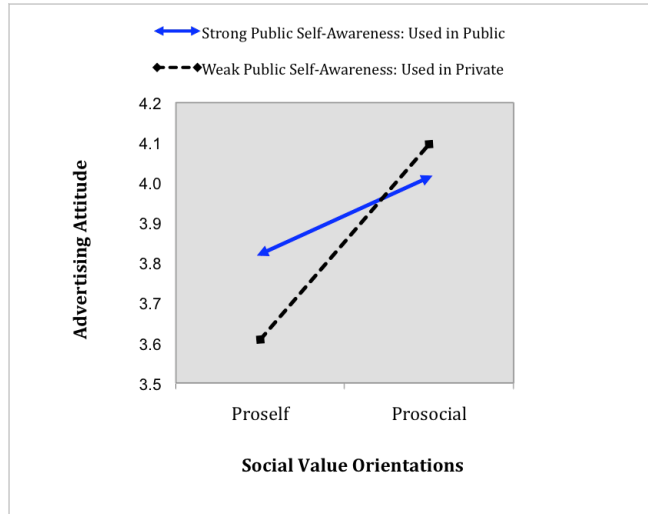


Figure 3. MANCOVA interaction plot for social value orientation and public self-awareness on advertising attitude.

Figure 4 describes the interaction effect of social value orientations and public self-awareness on brand attitude. While prosocials had overall positive attitudes toward a brand regardless of a brand being primarily used in public or private, proselves preferred a brand whose consumption is mainly seen in public rather than in private.

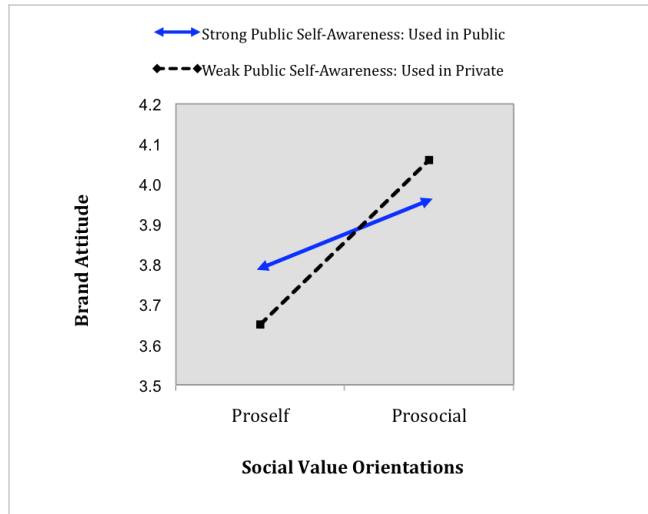


Figure 4. MANCOVA interaction plot for social value orientation and public self-awareness on brand attitude.

In the Figure 5, proselfs showed even higher purchase intentions than prosocials when they were exposed to a green product that is used mainly in public. Proselfs, however, if the product is used mainly in private, implying a lower public self-awareness, showed a lower purchase intention than did prosocials.

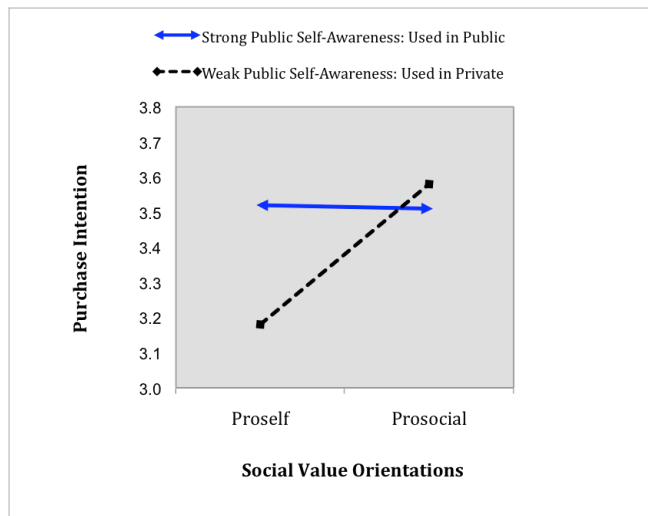


Figure 5. MANCOVA interaction plot for social value orientation and public self-awareness on purchase intention.

Hypothesis 3

While Hypothesis 2 predicted the interaction between social value orientations and public self-awareness, Hypothesis 3 questioned whether benefit distance of environmental claim in advertising would moderate the effect of social value orientations on green advertising effectiveness.

Hypothesis 3: The effects benefit distance of environmental claims in advertising on (a) advertising attitudes, (b) brand attitudes, and (c) purchase intentions will be moderated by consumers' social value orientations.

A MANCOVA was conducted to assess the interaction effect between consumers' social value orientations and benefit distance of environmental claims on (a) advertising attitudes, (b) brand attitudes, and (c) purchase intentions. As shown in Table 5, the MANCOVA confirmed that benefit distance did not have a significant interaction with social value orientations (Wilks's $\lambda = .99, p = .25$), indicating that neither proselfs nor prosocial consumers' (a) advertising attitudes ($F(1, 393) = .04, p = .84$), (b) brand attitude ($F(1, 393) = .68, p = .41$), and (c) purchase intention to a green product ($F(1, 393) = .11, p = .74$) was affected by benefit claims in advertising. Thus, Hypothesis 3 was rejected.

Hypotheses 3a and 3b were proposed to examine if proselfs and prosocials would show different results in terms of green advertising effectiveness. These hypotheses, however, were not tested because the main hypothesis 3 did not turn out to be significant. In addition to benefit distance, the MANCOVA confirmed that neither the two-way interaction between public self-awareness and benefit distance (Wilks's $\lambda = 1.00, p = .80$) nor the three-way interaction among social value orientations, public self-awareness, and

benefit distance (Wilks's $\lambda = 1.00, p = .56$) was proved to be significant (Table 5).

Hypothesis 4

Hypothesis 4 predicted that skepticism toward green claims in advertising would influence green advertising effectiveness.

Hypothesis 4: Consumers' skepticism toward green claims in green advertising will affect green advertising effectiveness.

Given the assumption that consumers' skepticism toward a green claim in advertising would influence their attitudinal and behavioral responses, the analysis includes skepticism as a covariate. As shown in the Table 5, skepticism had a significant main effect (Wilks's $\lambda = .89, p < .01$) with consumers' responses to (a) advertising attitudes ($F(1, 393) = 47.99, p < .01$), (b) brand attitudes ($F(1, 393) = 38.50, p < .01$), and (c) purchase intentions ($F(1, 393) = 26.16, p < .01$), indicating that Hypothesis 4 was supported.

Further, Hypothesis 4a predicted that consumers who are more skeptical toward a green claim would show less favorable attitude toward green advertising, a green brand, and less likely to purchase a green product.

Hypothesis 4a: Consumers who are skeptical toward a green claim will show less favorable (a) advertising attitudes, (b) brand attitudes, and less likely to (c) purchase a green product than are less skeptical toward a green claim.

The follow-up analysis was run to examine the relationship between skepticism and green advertising effectiveness. The Pearson correlation was conducted to measure the relationship. Significant negative correlations were found with skepticism toward green claims and (a) advertising attitude ($r = -.34, p < .01$), (b) brand attitude ($r = -.31, p$

< .01), and (c) purchase intention ($r = -.23, p < .01$). As shown in Table 4, the correlation coefficient confirmed that consumers' skepticism toward green claims and green advertising effectiveness showed negative relationship, implying that more skeptical consumers are less likely to responsive to green advertising, green product, and less likely to buy a green product than are less skeptical consumers.

In addition, the inclusion of skepticism toward green claim in advertising as a covariate increased a level of significance and observed power by accounting for some of the variance in the dependent variable. The interaction between social value orientations and public self-awareness without skepticism as a covariate did not turn out to be significant in (a) advertising attitudes ($F(1, 394) = 3.88, p = .05$, observed power = .50) and (b) brand attitudes ($F(1, 394) = 2.77, p = .10$, observed power = .38). With the inclusion of skepticism as a covariate, however, the interaction between social value orientations and public self-awareness turned out to be significant (Wilks's $\lambda = .95, p < .05$) with an increased observed power in (a) advertising attitudes ($F(1, 393) = 9.87, p < .01$, observed power = .88) and (b) brand attitudes ($F(1, 393) = 7.25, p < .01$, observed power = .77) with an increased observed power.

Summary of the Results

This chapter presented the research process used to investigate the effects of social value orientations on consumers' attitudinal and behavioral responses. Specifically, framing conditions manipulated with public self-awareness and benefit distance were crossed with two levels of social value orientations. A total of 402 participants took part in the 2 (social value orientations: proself vs. prosocial) x 2 (public self-awareness: strong vs. weak public self-awareness) x 2 (benefit distance: immediate

vs. future benefit to the environment) between-subject experimental design. Four major hypotheses and sub-hypotheses were tested in the main experiment.

First, Hypothesis 1 predicted that consumers' attitudinal and behavioral responses to green advertising and a green product are affected by consumers' social value orientations. The results confirmed that social value orientations showed a significant main effect on (a) advertising attitudes, (b) brand attitudes and (c) purchase intentions. Specifically, the result from Hypothesis 1a confirmed that prosocials showed more favorable attitudes when evaluating green advertising and a green product, and had greater intention to purchase a green purchase than did proselfs. As the results showed, Hypothesis 1 and 1a was supported.

Second, Hypothesis 2 predicted that the effect of social value orientations would be moderated by public self-awareness driven by consumption of a green product. The results from Hypothesis 2 supported that the effect of consumers' value orientations was moderated by public self-awareness. Specifically, the result of Hypothesis 2a confirmed that public self-awareness was the significant contributor to the interaction effect between consumers' social value orientations and their attitudinal and behavioral responses, indicating that proselfs generally showed less favorable attitude and behavioral responses with regard to green advertising and green purchase than did prosocials, however, when an advertised green product and its consumption are seen in public, promoting strong public self-awareness, proself consumers change their attitudes and behavioral responses toward a positive direction. In contrast, Hypothesis 2b predicted that prosocial consumers' responses would not be affected by public self-awareness. The result from Hypothesis 2b confirmed that for prosocial consumers, a level of public self-awareness

did not make a significant contribution to consumers' attitudes and behavioral intentions, indicating that prosocials showed equally positive advertising attitude, brand attitude, and purchase intention regardless of the product type that promoted different levels of public self-awareness. As the results showed, Hypothesis 2, 2a, and 2b were supported.

Third, while Hypothesis 2 predicted the interaction between social value orientations and public self-awareness, Hypothesis 3 questioned whether benefit distance of environmental claim in advertising would moderate the effect of social value orientations on green advertising effectiveness. The result confirmed that benefit distance did not have a significant interaction with social value orientations, indicating that neither proselfs nor prosocial consumers' advertising attitudes, brand attitude, and purchase intention to a green product was affected by benefit claims in advertising. Although Hypotheses 3a and 3b were proposed to examine if proselfs and prosocials would show different results in terms of green advertising effectiveness, these hypotheses were not tested because Hypothesis 3 was rejected. Thus, Hypothesis 3, 3a, and 3b were rejected.

Last, Hypothesis 4 predicted that skepticism toward green claims in advertising have a significant impact on consumers' responses to advertising attitudes, brand attitudes, and purchase intentions. The results confirmed that consumers' skepticism toward green claims have a significant influence on consumers' attitudinal and behavioral responses to green advertising and a subsequent green product. Hypothesis 4a was proposed to further analyze the relationship between skepticism and green advertising effectiveness. The results of Hypothesis 4a confirmed that significant negative correlations were found with skepticism toward green claims and advertising attitude,

brand attitude, and purchase intention, implying that more skeptical consumers are less likely to responsive to green advertising, green product, and less likely to buy a green product than are less skeptical consumers.

CHAPTER V

DISCUSSION

General Discussion

The present study was developed from the recent media coverage of a success of expensive but environmentally friendly products. Examples include the success of Prius or installation of a solar panel (Blanchard, 2011). These are examples of consumers' conspicuous but environmentally conscious behaviors, commonly known as conspicuous conservation (Griskevicius et al., 2010; Sexton & Sexton, 2012). Traditionally, consumers' environmentally conscious behaviors are considered as self-sacrificing, prosocial behaviors. However, as consumers' motivations to purchase environmentally friendly products become multifaceted, the conspicuous consumer behaviors in an environmental context are difficult to explain with conventional prosocial behavior theories.

The researcher witnessed these conspicuous consumer behaviors in an environmental context and investigated conspicuous conservation from a theoretical and practical standpoint. This chapter presents the key implications of the results for both theory and practice. From a theoretical standpoint, the results help to advance literature in consumer and advertising research regarding consumers' conspicuous environmental behaviors. In addition to advancing theories, the study results also offer practitioners theory-driven insights concerning strategies and tactics to promote consumers' environmentally conscious behaviors that are driven by different value orientations. Lastly, the chapter concludes with limitations and future research areas for consideration.

Theoretical Implications

Social Value Orientations as a Predictor of Green Consumerism

A considerable amount of consumer research in an environmental domain adopted either environmental attitudes or environmental concerns as a major predictor to explain consumers' environmental behaviors, especially green purchase behaviors (Kaiser et al., 1999; Milfont & Duckitt, 2004; Stern, 2000). As indicated in the previous chapters, however, the environmental attitude–environmental behavior relationship appears to be low to moderate (Kaiser et al., 1999; Milfont & Duckitt, 2004). In particular, when environmental attitude is used to understand consumers' conspicuous environmental behaviors, the predictive ability of environmental attitudes would be even weaker. Similarly, the environmental attitude–behavior gap appears to be inconsistent throughout previous studies, resulting in pessimistic views of the usefulness of environmental attitude as a single predictor of environmental behavior (Heberlein, 1981; Kaiser et al., 1999; Stern, 2000) and raising the necessity of other variables that help complete the prediction of environmental behaviors.

The present study, hence, incorporated the concept of social value orientations to understand consumers' environmental behaviors, including conspicuous environmental consumption. The concept of social value orientations is defined as an individual's consistent preferences for particular distributions of outcomes to self and other (McClintock & Messick, 1968; Messick & McClintock, 1968). It has been empirically observed that individuals differ in the relative importance or weight they assign to their own and others' outcomes, and that these differences, in turn, are expressed in the individuals' social decisions and behaviors (McClintock & Liebrand, 1988; Van Lange et

al., 1997). Social value orientation has been used to understand consumers' wide range of environmental behaviors, such as recycling, saving and conserving energy, participating in activism, and purchasing environmentally friendly products (De Groot & Steg, 2010; Garling et al., 2003; Karp, 1996). However, no previous studies have specifically investigated the effects of consumers' social value orientations on green advertising effectiveness. Given relatively scarce previous research, the researcher specifically studied the effects of consumers' value orientations and how these value orientations had an impact on consumers' attitudinal and behavioral response regarding green advertising and green consumption.

The results of Hypothesis 1 and 1a confirmed that consumers' value orientations have a significant main effect on their attitudinal and behavioral responses to green advertising and green product. As previous literature suggested, people who have a prosocial value orientation focus on optimizing benefits for others and thereby have a greater propensity to engage in environmentally significant behaviors than do people who have a proself value orientation (De Groot & Steg, 2010; Garling et al., 2003; Van Vugt et al., 1995). As the results of Hypothesis 1a showed, it is proved that consumers who have a prosocial value orientation, as they have a greater propensity to engage in environmentally conscious behavior, have more favorable attitudes toward green advertising and toward a green product, and more positive intentions to purchase a green product than consumers who have proself value orientation.

Prosocial values and corresponding prosocial behaviors can be explained with the norm activation model that assumes that morality plays a key role in pro-environmental behaviors. Morality in the norm activation model refers to those personal norms that

reflect feelings of moral obligation to perform or refrain from a specific action. When personal norms are activated, corresponding pro-environmental actions in a related domain will occur to comply with those personal norms (Schwartz, 1977). As Schwartz's norm activation theory proposed, the present study proved that consumers driven by prosocial values felt a moral obligation to support a green product featured in advertising, then corresponding prosocial attitudes (positive attitudes toward green advertising and a featured brand) and behaviors occurred to comply with the personal norms.

Proself-Oriented Consumers and Conspicuous Conservations

As research on social dilemmas indicated, one method to elicit prosocial behaviors is to visualize the threats to the common interest and to make outcomes of a prosocial choice more visible and proximal (Garling et al., 1999). Further, as the costly signaling theory and competitive altruism emphasized, one of the key factors in how status motives influence prosocial behaviors is the extent to which the behavior occurs in public versus in private (Griskevicius et al., 2007). Theories that explain prosocial behaviors have supported that public self-awareness and benefit distance of advertising claim are major factors that encourage proself consumers' conspicuous environmental behaviors.

Hence, Hypothesis 2, 2a, and 2b were proposed with the assumption that consumers' conspicuous conservation would depend on a level of public self-awareness driven by a consumption of green product. Specifically, Hypothesis 2a was intended to examine which type of framing condition was the most effective in terms of eliciting positive attitudes toward green advertising, a green product, and green purchase

intentions from proself-oriented consumers. The results from Hypothesis 2a indicated that activating public self-awareness led consumers with proself value orientations to choose a green product that was seen mainly by others in public over another green product used mainly in private. Specifically, in the study, proselfs were more favorable toward a hybrid car and a portable stainless water bottle than toward an energy-efficient washing machine and environmentally friendly hand soap because the former products are mostly used in public, enhancing consumers' public self-awareness.

The finding is relevant to the previous study done by Griskevicius et al. (2010). The authors compared a rate of purchase of green products when the products were purchased through a public setting (shopping at an offline store) with a private setting (online shopping at home). The rate of green product purchase is much higher in a public setting (Griskevicius et al., 2010), indicating that green product purchase in public can conspicuously signal characteristics about the buyer to an immediate audience. An additional study conducted by White and Peloza (2009) compared self-benefit with other-benefit messages that solicit charitable support. While self-benefit appeals, emphasizing that the main beneficiary of the support is the donor, have more persuasive effects when a donor makes a decision in private, other-benefit appeals, highlighting that the main beneficiary of the support is other individuals, organizations, or society, are more effective when the donor makes the decision in public.

Public Self-Awareness Driven by Social Motives

The idea of public self-awareness in consumers' green purchase behavior is relevant to the notion of social norms. Most human behaviors, including that consumers' environmental behaviors, exist in a social context where certain social norms exist.

Individuals respond to cues about their behavior choice based upon observing others' behaviors based on a premise that their behaviors would be viewed by others (Keizer & Schultz, 2012). As environmental issues are gaining public attention, as society requires individuals' austerity rather than ostentation for the benefit of the environment, and as consumers seek social status and reputation through displays of mindful consumption, a social norm is created that requires individuals to be environmentally conscious and supportive of green products and to forgo conventional products that might be detrimental to the environment. Conforming to social norms is associated with social acceptance or rewards. It was further pointed out that consumers tend to conform to social norms to achieve social status and reputation because consumers' choice of purchasing green products demonstrates that they are willing and able to incur the cost of owning a product that benefits the environment and society, as voluntary acts of self-sacrifice and the ability to incur costs are associated with social status and reputation (Barclay, 2004; Griskevicius et al., 2010).

In sum, the study demonstrated that consumers' social value orientations have a significant influence on their responses to green advertising, a green product, and green purchase intentions. Specifically, the norm activation model supports the idea that prosocials are more favorable toward green advertising and green products than proselfs because they have a moral obligation and personal norms to support the greenness. In contrast, proselfs are favorable toward green advertising and green products only under a certain condition where social norms and social expectations are activated. To comply with social norms and to acquire social status and reputations, proselfs intentionally support the greenness and forgo non-greenness.

Practical Implications

John Cloud wrote “We may all be selfish and petty, but there is no reason the planet can’t benefit from those shortcomings” in Times (Cloud, 2009). Selfishness had been associated with being detrimental to the collective welfare. The present study, however, suggests that activating public self-awareness may be an effective strategy for promoting environmentally conscious or other types of prosocial behavior. Indeed, while other predictors, including economic status, environmental concerns, attitudes, and regulatory factors, can certainly foster consumers’ green behaviors, the social aspects of conservation are often ignored. The present study showed that public self-awareness driven by social motives can be significant contributors in fostering green behaviors.

Public Self-Awareness and Social Motives to Elicit Environmental Behaviors

The findings suggest that practitioners, when promoting green products, can clearly link such products to social motives. For example, designing green products that symbolize owners’ affinity for the environment or green advertising messages that highlight psychological benefits would encourage proself consumers’ green product support. Traditionally, green products and green product advertising have focused on emphasizing physical benefits to the environment and utilitarian benefits that an owner would receive in the future. Common green claims that a product is biodegradable, recyclable, or saves a certain amount of electricity every year for energy-efficient appliances or solar panel are examples of utilitarian and physical benefits. The findings of the study, however, suggest that, when a green product has a high level of public self-awareness, indicating that the product and its consumption is seen by others in public, emphasizing psychological benefits to the owner would be more persuasive than focusing

on physical benefits. This technique has been used in other social campaigns to develop awareness of issues. For example, the highly visible yellow wristband that signifies a cancer donation during a health campaign is one example of eliciting prosocial behaviors.

Green Consumer Segmentations

The finding also suggests that there is another way to segment green consumers based on their value orientations. Numerous industrial efforts have been made to segment this specific group of consumers. Green consumer segmentation, however, has been based on a consumer's degree of environmental concerns, attitudes, and self-reported behaviors. As indicated in the previous chapters, environmental concerns and attitudes are limited in predicting consumers' actual environmental behaviors, including green purchase behaviors. Hence, the study findings suggest that segmenting green consumers based on consumers' social value orientations will help marketers understand the consumers' underlying motivations for their environmentally conscious behaviors and to know whether greenness is an appropriate selling attribute. Further, the marketers can understand how the consumers' value orientations could be incorporated into the brand communications.

Limitations and Future Research

Conceptual and Methodological Limitations

The current research has a several limitations that should be clarified in future research. First, the social value orientations were measured with a continuous scale; however, participants were divided into two groups based on the mean scores. Although the pretest and the main test confirmed that the ratio of proself and prosocial is almost equal and the statistical test confirmed that the two groups were significantly different,

there is a possibility that a number of participants were neither proself nor prosocial-oriented, implying that those of participants were close to a mean score of value orientations. The validity of the study would be increased if the experiment either had excluded participants who are close to a means score or had included those participants who had unclear value orientations as a middle group.

Second, although the main experiment was the 2 (social value orientations: proself vs. prosocial) x 2 (public self-awareness: strong vs. weak public self-awareness) x 2 (benefit distance: immediate vs. future benefit to the environment) between-subject design, neither the two-way interaction between public self-awareness and benefit distance nor the three-way interaction among social value orientations, public self-awareness, and benefit distance turned out to be significant. A plausible reason behind these non-significant results is due to the way of framing benefit distance of environmental claims in the experiment. Benefit distance, in the present study, was framed with an advertising claim by varying the time required for the environment to receive the benefit from consumption of a green product. The results would be different or even make a significant contribution to the study if the benefit receiver was a consumer not the environment. For example, if benefit distance had framed with a benefit to consumers not to the environment, the result would be different because proselfs and their underlying motivations are driven by immediate, self-interests rather than the long-term, collective welfare (Dawes, 1980; Garling et al., 2001; Kramer et al., 1986; Messick & Brewer, 1983).

Last, public self-awareness was manipulated with a product and its consumption setting. Public self-awareness is defined as an individual's tendency to identify the self

and evaluate its own actions through another's standpoint (White & Peloza, 2009), implying that public self-awareness can be considered a stable, individual tendency rather than a context-specific construct. In other words, some people might not consider a portable water bottle a green product that brings about strong public self-awareness. There is a possibility that confounding variables would be drawn from participants' prior consumption experiences related to the product category that the researcher selected for the present study. These limitations also will benefit future research.

Future Research

There are several possible extensions to this research. First, although the present study manipulated public self-awareness with a private and public consumption setting, a future study may manipulate public self-awareness with a broader social context. As mentioned in the previous chapter, in cities of strong green ethos, there are strict social norms of negative consequences caused by one's environmentally detrimental behaviors. Likewise, the level of public self-awareness in these green cities would be different from that in non-green cities. As the case of the solar panel installation implied, people who live in communities with strong green ethos have a tendency to comply with social norms created by social context and influence and to experience strong feelings of guilt and perceptions of social sanctions.

Second, although the present study compared the relationship between consumers' value orientations, level of consumers' public self-awareness and perceived benefit distance, a future study could incorporate self- and other-benefit appeals to elicit consumers' environmental behaviors. As the self- and other-benefit appeals have been studied in relation to charitable support, the concept of self-benefit and other benefits can

be applicable in an environmental context because the effects of self-benefit and other benefits are dependent on consumers' value orientations. As an exploratory step, analyzing green product advertising whose claims focus on either benefits to a buyer or benefits to the environment, other organizations, and other consumers would be an interesting investigation for future research.

Finally, as skepticism has an overall negative impact on consumers' responses to green advertising and a green product, a future study could investigate how consumers' skepticism would be related to their social value orientations. The study also could extend by investigating whether skepticism toward green claims have a possible relationship with other variables, including a type of green message appeal, product category involvement, and an individual's level of social value orientation. Further, as prosocials are generally more concerned about the environment, are more likely to engage in pro-environmental behaviors, and have more knowledge regarding the negative consequences of environmental problems than do proselfs, it is possible to assume that prosocials are more skeptical toward green claims than are proselfs. Therefore, whether consumers' skepticism toward green claims depends on their value orientation is another interesting question for future research.

Conclusion

As environmental issues are gaining public attention and as consumers seek social status through displays of mindful consumption, it becomes common to observe a new type of environmentally responsible but conspicuous behaviors called conspicuous conservation (Sexton & Sexton, 2012). Given the recent consumer trend involved in green consumption, the study raised a question whether social value orientations could

explain the conspicuous conservation. The study proved that consumers driven by prosocial value orientation have a more favorable attitude toward green advertising and intentions to purchase green products than those driven by proself value orientation. Proself-driven consumers, however, tend to shift their attitude and purchase intention more in positive direction when a green product and its consumption is seen by others in public, indicating that public self-awareness is a significant contributor when explaining conspicuous conservation.

The study has theoretical and practical contributions to the current stream of consumer research in an environmental context. First, the study specifically investigated the effects of consumers' social value orientations in response to green advertising. Previous studies in value orientations mostly focused on explaining helping and prosocial behaviors in an environmental domain. No studies have been specifically looking at the relationship between value orientations and its effect on attitudes toward green advertising. Given relatively scarce previous research, the study offers a meaningful contribution to the current stream of environmental communication research as well. Second, conspicuous conservation can be explained with value orientations and public self-awareness. Previous studies only focused on social norms, status signaling, and competitive altruism as a theoretical framework to explain conspicuous conservation. The present study incorporated public self-awareness as a moderator to explain consumers' conspicuous conservation driven by proself-oriented values. Third, the finding of the study implied practical contributions as well. The study suggests that when promoting green products, practitioners can clearly link such products to social motives that enhance public self-awareness. For example, designing green products and green

advertising messages that symbolize owners' affinity for the environment would encourage proself consumers' green product supports. Last, the finding also suggests that value orientations can be used to segment green consumers. Value orientations will help marketers understand the consumers' underlying motivations for their environmentally conscious behaviors and to know whether greenness is an appropriate selling attribute. Further, the marketers can understand how the consumers' value orientations could be incorporated into the brand communications.

APPENDIX A

STIMULUS ENVIRONMENTAL CLAIMS

		Public Self-Awareness	
		Strong PSA: Used in Public	Weak PSA: Used in Private
Benefit Distance	Immediate benefits to the environment	A. Hybrid-car <ul style="list-style-type: none"> • 60mpg in city: Save up to \$800 on gasoline per year. • Advanced hybrid technology: lesser CO² and other greenhouse gas emissions • Solar power ventilation system: helps cool the interior with solar energy • Recyclable: 85% of raw material used to manufacture Triton is recyclable • “As a member of 1% FOR THE PLANET, we donate 1% of sales to American Water Works Associations for each Triton we sold.” 	B. Washing machine <ul style="list-style-type: none"> • Energy Star washing machine. “Save up to \$800 on electricity per year.” • Coldwash technology: Enhanced washing motions giving you cold water savings with warm water performance. • Dry sensor system: dryer automatically stops when clothes are completely dry • Recyclable: 85% of raw material used to manufacture Triton is recyclable • “As a member of 1% FOR THE PLANET, we donate 1% of sales to American Water Works Associations for each Triton we sold.”
		C. Portable Water-bottle <ul style="list-style-type: none"> • 18/8, high quality, food grade stainless steel not tested on animals • No BPA, phthalates, lead, or toxins • Recyclable bottle / biodegradable package • Committed to strong environmental standards. • “As a member of 1% FOR THE PLANET, we donate 1% of sales to American Water Works Associations for each Triton we sold.” 	D. Liquid hand soap <ul style="list-style-type: none"> • 100% natural ingredients not tested on animal • No BPA, phthalates, lead, or toxins • Biodegradable package/container • Committed to strong environmental standards. • “As a member of 1% FOR THE PLANET, we donate 1% of sales to American Water Works Associations for each Triton we sold.”
	Future benefits to the environment	E. Hybrid-car <ul style="list-style-type: none"> • 60mpg in city: Save up to \$800 on gasoline per year. • Advanced hybrid technology: lesser CO² and other greenhouse gas emissions • Solar power ventilation system: helps cool the interior with solar energy • Recyclable: 85% of raw material used to manufacture Triton is recyclable • “As a member of 1% FOR THE PLANET, we’ve donated 1% of annual sales to American Water Works Associations.” 	F. Washing machine <ul style="list-style-type: none"> • Energy Star washing machine. “Save up to \$800 on electricity per year.” • Coldwash technology: Enhanced washing motions giving you cold water savings with warm water performance. • Dry sensor system: dryer automatically stops when clothes are completely dry • Recyclable: 85% of raw material used to manufacture Triton is recyclable • “As a member of 1% FOR THE PLANET, we’ve donated 1% of annual sales to American Water Works Associations.”
		G. Portable Water-bottle <ul style="list-style-type: none"> • 18/8, high quality, food grade stainless steel not tested on animals • No BPA, phthalates, lead, or toxins • Recyclable bottle / biodegradable package • Committed to strong environmental standards. • “As a member of 1% FOR THE PLANET, we’ve donated 1% of annual sales to American Water Works Associations.” 	H. Liquid hand soap <ul style="list-style-type: none"> • 100% natural ingredients not tested on animals • No BPA, phthalates, lead, or toxins • Biodegradable package/container • Committed to strong environmental standards. • “As a member of 1% FOR THE PLANET, we’ve donated 1% of annual sales to American Water Works Associations.”

APPENDIX B

STIMULUS ADVERTISEMENTS

Group 1: Strong Public Self-Awareness with Immediate Benefits to the Environment

<p style="text-align: center;">TRITON</p> <p style="text-align: center;">As a member of 1% FOR THE PLANET, every day we donate 1% of sales to American Water Works Association for each Triton we sell.</p>  <p style="text-align: center;">HYBRID</p> <table border="0"><tr><td>40mpg in city: Save up to \$600 on gasoline per year.</td><td>Advanced hybrid technology: Lesser CO₂ and other green- house gas emissions.</td><td>Solar power ventilation system: Helps cool the interior with solar energy.</td><td>Recyclable: 80% of raw material used to manufacture Triton is recyclable.</td></tr></table>	40mpg in city: Save up to \$600 on gasoline per year.	Advanced hybrid technology: Lesser CO ₂ and other green- house gas emissions.	Solar power ventilation system: Helps cool the interior with solar energy.	Recyclable: 80% of raw material used to manufacture Triton is recyclable.	<p style="text-align: center;">TRITON</p>  <p style="text-align: center;">As a member of 1% FOR THE PLANET, every day we donate 1% of sales to American Water Works Association for each Triton we sell.</p> <ul style="list-style-type: none">• 18% high quality, food grade stainless steel not tested on animals.• No BPA, phthalates, lead, or toxins.• Recyclable bottle / biodegradable package.• Committed to strong environmental standards.
40mpg in city: Save up to \$600 on gasoline per year.	Advanced hybrid technology: Lesser CO ₂ and other green- house gas emissions.	Solar power ventilation system: Helps cool the interior with solar energy.	Recyclable: 80% of raw material used to manufacture Triton is recyclable.		

**Group 2:
Strong Public Self-Awareness with Future Benefits to the Environment**

<p>TRITON</p> <p>As a member of 1% FOR THE PLANET, we will donate 1% of annual sales to American Water Works Association.</p>  <p>HYBRID</p> <p>40mpg in city: Save up to \$600 on gasoline per year.</p> <p>Advanced hybrid technology: Lesser CO₂ and other green- house gas emissions.</p> <p>Solar power ventilation system: Helps cool the interior with solar energy.</p> <p>Recyclable: 80% of raw material used to manufacture Triton is recyclable.</p>	<p>TRITON</p>  <p>As a member of 1% FOR THE PLANET, we will donate 1% of annual sales to American Water Works Association.</p> <ul style="list-style-type: none"> • 18/8, high quality, food grade stainless steel not tested on animals. • No BPA, phthalates, lead, or toxins. • Recyclable bottle / biodegradable package. • Committed to strong environmental standards.
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**Group 3:
Weak Public Self-Awareness with Immediate Benefits to the Environment**



TRITON

As a member of **1% FOR THE PLANET**,
every day we donate 1% of sales to American Water Works
Association for each Triton we sell.

<p>Energy Star washing machine: Save up to \$800 on electricity per year.</p>	<p>Dry sensor system: Dryer will automatically stop when clothes are completely dry.</p>	<p>Coldwash technology: Uses cold water and enhanced washing motions to penetrate deep into fabrics, giving you cold water savings with warm water performance.</p>	<p>Recyclable: 85% of raw material used to manufacture Triton is recyclable.</p>
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TRITON

As a member of **1% FOR THE PLANET**,
every day we donate 1% of sales to American Water Works
Association for each Triton we sell.

- 100% natural ingredients not tested on animals.
- No BPA, phthalates, lead, or toxins.
- Biodegradable package/container.
- Committed to strong environmental standards.

**Group 4:
Weak Public Self-Awareness with Future Benefits to the Environment**

<p style="text-align: right;">TRITON</p>  <p style="text-align: center;">As a member of 1% FOR THE PLANET, we will donate 1% of annual sales to American Water Works Association.</p> <p>Energy Star washing machine: Save up to \$800 on electricity per year.</p> <p>Dry sensor system: Dryer will automatically stop when clothes are completely dry.</p> <p>Coldwash technology: Uses cold water and enhanced washing motions to penetrate deep into fabrics, giving you cold water savings with warm water performance.</p> <p>Recyclable: 85% of raw material used to manufacture Triton is recyclable.</p>	<p style="text-align: right;">TRITON</p>  <p style="text-align: center;">As a member of 1% FOR THE PLANET, we will donate 1% of annual sales to American Water Works Association.</p> <ul style="list-style-type: none"> • 100% natural ingredients not tested on animals. • No BPA, phthalates, lead, or toxins. • Biodegradable package/container. • Committed to strong environmental standards.
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APPENDIX C

PRETEST QUESTIONNAIRE

Screening Question

Environmentally friendly product (also pro-environmental, eco-friendly, or green products) refers to products that claim to inflict minimal or no harm to the environment. These type of products help conserve energy, minimize carbon footprint or the emission of greenhouse gases, and does not lead to substantial toxicity or pollution to the environment when in their productions, use, or disposal.

With that definition in mind, have you purchased an environmentally friendly product in the last 6 months?

- Yes
- No

1. Listed below is a list of values some of which individuals hold as guiding principles of life. Please read the list carefully and then indicate how important each of values is as a guiding principle in your life.

	Opposed to my values 1	Not Important 2	3	4	5	6	7	8	Extremely Important 9
Wealth: Material possession, money	0	0	0	0	0	0	0	0	0
A world at peace: Free of war and conflict	0	0	0	0	0	0	0	0	0
Social justice: Correcting injustice, care for the weak	0	0	0	0	0	0	0	0	0
Influential: Having an impact on people and events	0	0	0	0	0	0	0	0	0
Helpful: Working for the welfare of others	0	0	0	0	0	0	0	0	0
Social power: Control over others, dominance	0	0	0	0	0	0	0	0	0
Authority: The right to lead or command	0	0	0	0	0	0	0	0	0
Equality: Equal opportunity for all	0	0	0	0	0	0	0	0	0
Ambitious: Hard-working, aspiring	0	0	0	0	0	0	0	0	0

2. Listed below are statements about your opinion about environmental claims in advertising or in packaging of products. Please state how much extent to which you agree or disagree with each of following statements.

	Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree
Most environmental claims made on package labels or in advertising are true.	0	0	0	0	0
Because environmental claims are exaggerated, consumer would be better off if such claims on package labels or in advertising were eliminated.	0	0	0	0	0
Most environmental claims on package labels or in advertising are intended to mislead rather than to inform consumers.	0	0	0	0	0
I don't believe most environmental claims made on package labels or in advertising.	0	0	0	0	0

3. You see examples of two ads about an environmentally friendly washing machine. Please spend a few minutes reading the ads before answer the questions.

A. What extent do you think the copyline, "everyday we donate 1% of sales to American Water Works Association for each Triton we sell" promising benefits to the environment?

Immediate benefit to the environment 0 0 0 0 0 Future benefit to the environment



B. What extent do you think the copyline, " We will donate 1 % of annual sales to American Water Works Association" promising benefits to the environment?

Immediate benefit to the environment 0 0 0 0 0 Future benefit to the environment



4. Below is a list of environmentally friendly products you could see in your everyday life. What extent do you think these products differ in their primary usage?

	Mostly in private	Sometimes in private	Sometimes in public	Mostly in private
Hybrid vehicle	0	0	0	0
Washing machine	0	0	0	0
Hand soap	0	0	0	0
Portable water bottle	0	0	0	0

APPENDIX D

MAIN EXPERIMENT QUESTIONNAIRE

A sample packet from ‘Strong Public Self-Awareness and Immediate Benefit’ condition

Screening Question

Environmentally friendly product (also pro-environmental, eco-friendly, or green products) refers to products that claim to inflict minimal or no harm to the environment. These type of products help conserve energy, minimize carbon footprint or the emission of greenhouse gases, and does not lead to substantial toxicity or pollution to the environment when in their productions, use, or disposal.

With that definition in mind, have you purchased an environmentally friendly product in the last 6 months?

- Yes No

Part I. Pre-experimental questionnaire

1. Listed below is a list of values some of which individuals hold as guiding principles of life. Please read the list carefully and then indicate how important each of values is as a guiding principle in your life.

	Opposed to my values	Not Important							Extremely Important
	1	2	3	4	5	6	7	8	9
Wealth: Material possession, money	0	0	0	0	0	0	0	0	0
A world at peace: Free of war and conflict	0	0	0	0	0	0	0	0	0
Social justice: Correcting injustice, care for the weak	0	0	0	0	0	0	0	0	0
Influential: Having an impact on people and events	0	0	0	0	0	0	0	0	0
Helpful: Working for the welfare of others	0	0	0	0	0	0	0	0	0
Social power: Control over others, dominance	0	0	0	0	0	0	0	0	0
Authority: The right to lead or command	0	0	0	0	0	0	0	0	0
Equality: Equal opportunity for all	0	0	0	0	0	0	0	0	0
Ambitious: Hard-working, aspiring	0	0	0	0	0	0	0	0	0

2. Listed below are statements about your opinion about environmental claims in advertising or in packaging of products. Please state how much extent to which you agree or disagree with each of following statements.

	Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree
	Because environmental claims are exaggerated, consumer would be better off if such claims on package labels or in advertising were eliminated.	0	0	0	0
Most environmental claims on package labels or in advertising are intended to mislead rather than to inform consumers.	0	0	0	0	0
I don't believe most environmental claims made on package labels or in advertising.	0	0	0	0	0

Part II. Post-experimental questionnaire

Please consider yourself as a potential consumer in a hybrid vehicle market and read claims in the ads carefully as you search for information in magazine or newspapers about the vehicle you're about to purchase before answer the questions



3. After seeing the ad, please indicate how you felt the AD in general was by circling each of options below.

Good	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Bad
Pleasant	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Unpleasant
Favorable	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Unfavorable

4. After seeing the ad, please indicate how you felt the BRAND in the ad by circling of options below

Good	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Bad
Pleasant	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Unpleasant
Favorable	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Unfavorable

5. Listed below are statements about asking your intention to purchase the featured product in the ad. Please state how much extent to which you agree or disagree with each of following statements.

	Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree
It is very likely that I will switch to the brand that is advertised.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I will consider purchasing the brand next time I need it	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I will try the brand in the ad	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Next page, you will see an example ad about an Eco-friendly stainless water bottle, Triton. Please consider yourself as a potential consumer of a portable water bottle and read claims in the ads carefully as you search for information in magazine or in a newspaper about the water bottle you're about to purchase before answer the questions.



6. After seeing the ad, please indicate how you felt the AD in general was by circling each of options below.

Good	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Bad
Pleasant	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Unpleasant
Favorable	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Unfavorable

7. After seeing the ad, please indicate how you felt the BRAND in the ad by circling of options below

Good	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Bad
Pleasant	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Unpleasant
Favorable	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Unfavorable

8. Listed below are statements about asking your intention to purchase the featured product in the ad. Please state how much extent to which you agree or disagree with each of following statements.

	Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree
It is very likely that I will switch to the brand that is advertised.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I will consider purchasing the brand next time I need it	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I will try the brand in the ad	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Part III. Demographic Questionnaire

9. What is your gender?

- Male
- Female

10. What is your age?

- Under 15 years
- 15 – 24 years
- 25 – 34 years
- 35 – 44 years
- 45 – 54 years
- 55 – 64 years

11. What is your ethnic background?

- American Indian or Alaskan Native
- Black or African American
- Asian, Asian American or Pacific Islander
- Hispanic
- White or Caucasian
- Other, please specify

12. What is the highest level of education you have completed?

- Less than high school
- High school
- Some college
- 2 – year college
- 4 – year college
- Masters degree
- Doctoral degree
- Professional degree (JD, MD)

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