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Antecedents of Green Purchase Behavior: an Examination of Collectivism, Environmental Concern, and Pce

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ABSTRACT

Applying the conceptual framework of value-attitude-behavior relationship, the present study identifies key antecedents of green purchase behavior and develops a model for explaining their influence on ecological consumption. Using structural equation modeling, the effects of collectivism, environmental concern and Perceived Consumer Effectiveness (PCE) on ecological purchase and their interrelationships are investigated. Results suggest that the influence of collectivism flow through PCE; the collectivistic value orientations influence beliefs about consumer effectiveness, which in turn influence green buying behavior. Environmental concern, on the other hand, directly influences green purchase behavior. Implications and directions for future research are discussed.

INTRODUCTION

Public concern for environmental issues has gradually increased over the past three decades since the inception of Earth Day. Over 70 percent of Americans reported that they were in support of environmental protection and 49 percent said they would avoid purchasing products that are potentially harmful to the environment (Hueber 1991). Marketers have reacted to consumers' growing environmental consciousness by developing "environmentally friendly" products (Kohl 1990). However, only a few "green" products have been successful (Reitman 1991) despite the vast majority of consumers reporting that their purchases were influenced by environmental concerns (Chase and Smith 1992).

Little empirical evidence exists to support that proenvironmental attitudes and beliefs translate into environmentally conscious behavior such as green buying and recycling (Hume 1991). It is notable that proenvironmental behaviors differ from general purchase-related consumer behaviors. Engaging in a general purchase behavior is driven by an assessment of its benefits and costs that are relevant solely to the individual consumer performing the behavior. By contrast, environmentally conscious behavior is unlikely to deliver instant personal gain or gratification, but rather the future-oriented outcome (e.g., cleaner environment) that often benefits society as a whole (McCarty and Shrum 2001).

Accordingly, academic research in this area has centered on the identification of consumer motivation underlying proenvironmental behaviors (e.g., Bagozzi and Dabholkar 1994; Lee and Holden 1999) and the explication of the relationship between cognitive or motivational factors and environmentally conscious behavior (e.g., Dietz, Stern, and Guagnano 1998; Karp 1996; McCarty and Shrum 1993, 1994). Despite the continued efforts, it is still difficult to predict consumer acceptance of proenvironmental behavior. Prior research has identified several key factors motivating environmentally conscious behavior, including individuals' concerns about the environment, their beliefs about their ability to ease the problem (Elle, Weiner, and Cobb-Walgren 1991), and an overall orientation towards the welfare of others (Schwartz 1977; Stern, Dietz, and Kalof 1993) or towards their relationship with others (McCarty and Shrum 2001).

The purpose of the study presented in this paper is to develop and test a model that explains the potential influences of consumer value orientation and general proenvironmental concerns and be-

liefs on green buying behaviors. Moreover, the study clarifies how these variables relate to each other. The findings of this study further our understanding of what drives green buying behavior and provide implications for public policy makers and marketers.

THEORETICAL BACKGROUND

Collectivism and Green Purchase

Originated from Hofstede's work (1980), the notion of individualism versus collectivism illustrates differences in basic beliefs that individuals hold with respect to their interaction with others, priority of group goals, and perceived importance of unity with others. In general, people from individualistic cultures tend to be independent and self-oriented whereas those from collectivistic cultures are more interdependent and group-oriented. Individualism is characterized by independence, self-reliance, freedom of choice, and a high level of competition (Triandis 1989), while collectivism emphasizes interdependence, in-group harmony, family security, group-oriented goals, social hierarchies, cooperation, and a low level of competition (Hofstede 1980; Triandis 1995). This value orientation has been investigated mostly at the aggregate level to detect similarities and differences across cultures. An alternative view argues that a person may possess both individualistic and collectivistic tendencies and individuals within a culture differ in their value orientation. Consequently, personal beliefs with regards to the cultural orientation can be examined at the individual, psychological level and these person-level tendencies, often termed *idiocentrism* and *allocentrism* referring to individualism and collectivism, respectively, are considered to replicate the cultural-level classification (Triandis 1989, 1994).

Individualistic or collectivistic orientations have been found to influence a variety of social behaviors. Likewise, person-level tendencies of individualism or collectivism appeared to influence their motivation to engage in environmentally conscious behaviors. McCarty and Shrum (1994, 2001) found a positive impact of collectivism on consumer beliefs about recycling and their recycling behavior. That is, collectivistic persons are more likely to engage in recycling behaviors because they tend to be more cooperative, be more willing to help others, and emphasize group goals over personal ones than individualistic people. By contrast, people with individualistic tendencies tend to view recycling less important (McCarty and Shrum 2001) and are less likely to participate in behaviors for resource conservation (Dunlap and Van Liere 1984) than collectivistic people. Similar results were also found for ecological commitments (Li 1997), but little is known about the potential influences of collectivism or individualism on green purchase behaviors.

Theoretically, values can motivate and influence behavior (Carman 1977; Williams 1979). As the most abstract and general cognition, values guide the actions and judgments of people across specific situations and stimuli (Rokeach 1973); however, because values (as conceptualized in the tradition of social psychology) are the guiding foundations for attitude and belief development, values typically influence behavior indirectly through more specific attitudes or beliefs with regards to an object, topic or idea (Parsons and Shils 1951; Tolman 1951). The studies by McCarty and Shrum

(1994, 2001) showed an indirect effect of collectivism on recycling behavior mediated by the attitudes and beliefs related to recycling. Similar to these findings, the effects of collectivism on green purchase behaviors are predicted to flow through more specific attitudinal and cognitive concepts. The literature suggests environmental concerns and consumer self-efficacy as potential intervening variables in the relationship between collectivism and green buying behaviors.

Environmental Concerns and Green Purchase

Fundamental to environmental research is an individual's concern for the environment (Hines et al. 1987). Environmental concern denotes an individual's general orientation toward the environment and an individual's concern level as to environmental issues has been found to be a useful predictor of environmentally conscious behavior ranging from recycling behavior (Arbuthnot and Ligg 1975; Kellgren and Wood 1986; Simmons and Widmar 1990) to green buying behavior (Chan 1996; Donaton and Fitzgerald 1992; Kerr 1990; Ottman 1993; Schlossberg 1992). For instance, consumers with a stronger concern for the environment are more likely to purchase products as a result of their environmental claims (Mainieri et al. 1997) than those who are less concerned about the environmental issues.

An individual's environmental concern has also been found to relate to his or her fundamental beliefs or values (e.g., Schultz 2000; Stern et al. 1995) and can be determined by the individual's core value orientation. For example, environmental concerns are positively influenced by altruistic values including biospherism, but negatively relate to egoistic values (Schultz and Zelezny 1998). Similarly, collectivism may be linked to environmental concerns due to its emphasis on the well-being of the group members.

Central to the logic of the aforementioned relationships between collectivism, environmental concerns, and green purchase behaviors is a hierarchical model of value-attitude-behavior that has served as the conceptual framework for predicting a wide range of behaviors (e.g., Follows and Jobber 2000; Homer and Kahle 1988; McCarty and Shrum 1994). Yet, the strengths of the attitude-behavior relationship have been controversial (e.g., a weaker relationship than expected). Other factors such as behavioral intentions and situational factors have been suggested as additional variables explaining behavior, and some studies attempted to explain consumer participation in environmental behaviors by focusing on motivational concepts such as personal efficacy.

Perceived Consumer Effectiveness (PCE) and Green Purchase

Similar to the concept of self-efficacy in social learning theory (Bandura 1986), Perceived Consumer Effectiveness (PCE) refers to the extent to which individuals believe that their actions make a difference in solving a problem (Ellen, Weiner, and Cobb-Walgren 1991). PCE, defined as "the evaluation of the self in the context of the issue" (Berger and Corbin 1992, 80-81), differs from an attitude that reflects an evaluation of an issue (Tesser and Shaffer 1990).

Ellen, Weiner and Cobb-Walgren (1991) demonstrate that PCE for environmental issues is also distinct from environmental concerns or attitudes and make a unique contribution to the prediction of environmentally conscious behaviors such as green purchase. Consumer concerns about the environmental issues might not easily translate into proenvironmental behaviors; however, 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. Accordingly, self-efficacy beliefs may influence the likelihood of performing green purchase behavior.

PCE is determined by knowledge as well as direct and indirect experiences and varies with individuals as their personal knowledge and experiences differ (Brown 1979; Thompson 1981). Some people believe that their actions result in particular outcomes and thus bring about changes, while others have little confidence in their ability to make a difference. PCE is situation or issue-specific and this personal belief might be formed under the influence of more general or abstract value orientations. Individuals with a more collectivistic tendency are interdependent with members of their culture and their behaviors are shaped primarily on the basis of group norms and goals (Mills and Clark 1982). People who have a more collectivistic orientation also rate themselves higher on collectivist traits including respectfulness, obedience, dutifulness, reciprocity, self-sacrifice, conformity, and cooperativeness than those from individualistic cultures (Grimm et al. 1999). Thus, these collectivistic individuals might expect other members to perform the same behavior and thus have greater beliefs in making differences by engaging in the behavior at the aggregate level although the behavior is performed individually.

THE PROPOSED MODEL AND HYPOTHESES

The purpose of this study is to systematically assess the effects of collectivism, environmental concerns, and PCE on green purchase behavior and to explicate the interrelationships among the constructs. In light of the aforementioned discussion, a model is constructed and Figure 1 presents the proposed model with the hypothesized structural linkages among the variables. General predictions suggest that the value orientation of collectivism, defined and operationalized at the individual level, exert indirect effects on green buying behavior through PCE as well as direct effects. At the same time, environmental concerns might positively relate to green buying behavior according to the attitude-behavior framework. Specific hypotheses for the causal paths between the variables are put forth as follows:

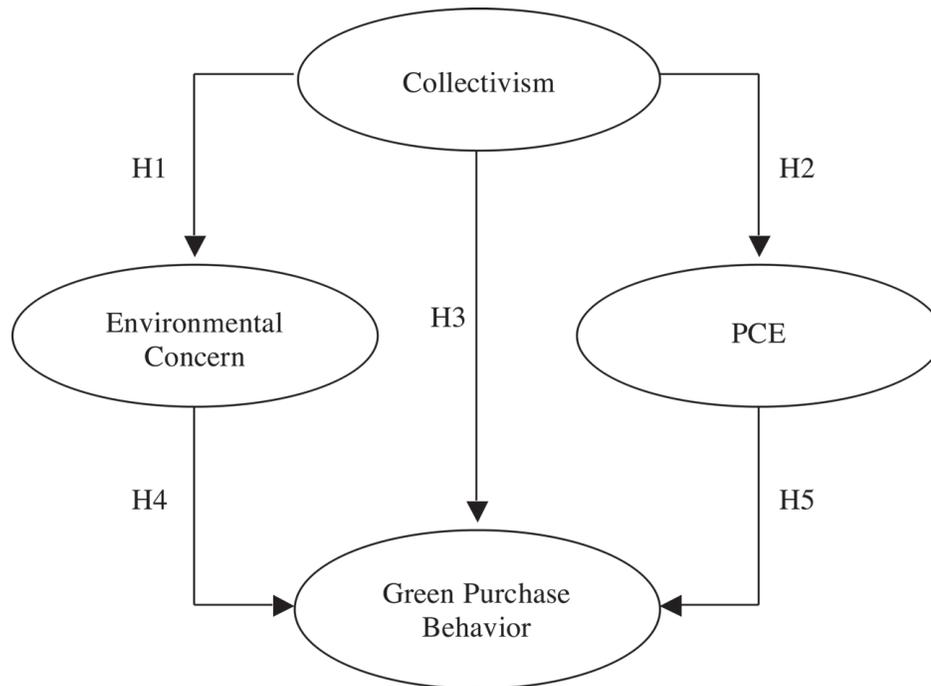
- H1: Collectivism directly and positively relates to environmental concern. People who are more collectivistic are likely to be more concerned about environmental problems than are those who are less collectivistic.
- H2: Collectivism directly and positively relates to perceived consumer effectiveness (PCE). People who are more collectivistic are likely to have higher self-efficacy in solving environmental problems than are those who are less collectivistic.
- H3: Collectivism directly and positively relates to green purchase behavior. People who are more collectivistic are more likely to engage in ecological consumption than those who are less collectivistic.
- H4: Environmental concern directly and positively relates to green purchase behavior. People with a high level of environmental concern are more likely to engage in proenvironmental behavior than are those who are less concerned about environmental issues.
- H5: PCE directly and positively relates to green purchase behavior. People who have higher PCE are more likely to engage in ecological consumption than are those with lower PCE.

METHOD

Participants

Data for the study were collected through a self-administered survey distributed to students enrolled at a Midwestern university.

FIGURE 1
Proposed Model



A total of 304 undergraduates participated in the study. The respondents ranged in age from 18 years to 29 years, with an average of 20 years. Of the total respondents, 40 percent were male and 60 percent were female. Over 82 percent were Caucasians and approximately 72 percent of the participants majored in advertising, public relations, or telecommunications.

Measures

Each latent construct was measured using multiple items, mostly adapted from previous literature. Collectivism was measured on a five-point, four-item scale with anchors of (1) "not at all important" to (5) "extremely important" (e.g., Yamaguchi 1990). PCE and environmental concerns were assessed on a seven-point, five-item, Likert-type scale respectively with endpoints of (1) "strongly disagree" to (7) "strongly agree." Respondents indicated the extent to which they engaged in purchasing green products on a five-point scale anchored with (1) "never," (2) "rarely," (3) "sometimes," (4) "often," and (5) "always." The specific items for the constructs as well as their means, standard deviations, and reliabilities are reported in Table 1.

DATA ANALYSIS AND RESULTS

To understand interrelationships between the constructs of interest, a proposed structural equation model was tested and retested with AMOS 4, using a two-step model-building approach that tests the measurement model before examining the hypothesized structural linkages (Anderson and Gerbing 1988). First, a measurement model that included latent constructs and indicators was first analyzed. Second, the proposed model with hypothesized relationships was tested and refined through a series of tests in an attempt to better explain the data. As a result, a final model is

presented. Missing data were treated with listwise deletion of cases and 302 cases were used for analysis.

The measurement model showed that all of the items significantly loaded on their corresponding factors ($p < .01$). With the use of existing scale items adapted from the literature for measuring the latent variables, the indicators were hypothesized to load on only one factor and the error terms were not allowed to covary unless a compelling conceptual justification was provided. Table 1 reports the factor loadings for each latent variable and correlations, covariances, and variances of the latent constructs are presented in Table 2. Overall, the goodness-of-fit indices indicated a good fit of the measurement model; $\chi^2 = 211.84$, $d.f. = 144$, $p < .01$; $GFI = .93$; $AGFI = .91$; $TFI = .96$; $CFI = .96$; $RMSEA = .04$.

Testing Hypotheses

The first step in testing the fit of the model was to estimate the paths in the proposed model in Figure 1. Of the five hypothesized relationships, three were statistically significant in the expected direction ($p < .01$), supporting H2 (collectivism to PCE), H4 (environmental concerns to green purchase behavior), and H5 (PCE to behavior). Contrary to expectations, however, two relationships were not significant ($p > .05$), thereby disconfirming H1 (collectivism to environmental concerns) and H3 (collectivism to behavior). Unstandardized and standardized path coefficients for the proposed model are reported in Table 3.

The goodness-of-fit indices suggest that the proposed model fit the data well; $\chi^2 = 237.10$, $d.f. = 145$, $p < .01$; $GFI = .92$; $AGFI = .90$; $TFI = .94$; $CFI = .95$; $RMSEA = .05$. However, in an attempt to refine the models and achieve parsimony, the non-significant relationships were tested in the second phase of the analysis by systematically relaxing a restriction and examining the resultant change in

TABLE 1
Summary of Measures, Descriptive Statistics, and Factor Loadings

Constructs	Measures	Unstd.	Std.
<i>Collectivism</i> Mean=3.58 SD=.93 Alpha=.76	I respect the majority's wish.	1.00*	.65
	I support my group, where they are right or wrong.	1.06	.59
	I respect decisions made by my group.	.87	.71
	I maintain harmony in my group.	.65	.52
<i>Perceived Consumer Effectiveness</i> ^a Mean=5.15 SD=1.16 Alpha=.74	Each person's behavior can have a positive effect on society by signing a petition in support of promoting the environment.	1.00*	.57
	I feel I can help solve natural resource problem by conserving water and energy.	1.41	.82
	I can protect the environment by buying products that are friendly to the environment.	1.16	.74
	There is not much that I can do about the environment (R). I feel capable of helping solve the environment problems.	.84 .76	.47 .46
<i>Environmental Concerns</i> ^a Mean=5.19 SD=1.85 Alpha=.84	I am extremely worried about the state of the world's environment and what it will mean for my future.	1.00*	.79
	Mankind is severely abusing the environment.	.89	.76
	When humans interfere with nature it often produces disastrous consequences.	.80	.67
	The balance of nature is very delicate and easily upset. Humans must live in harmony with nature in order to survive.	.69 .66	.65 .64
<i>Green Purchase Behavior</i> M=2.48 SD=1.23 Alpha=.83	I make a special effort to buy paper and plastic products that are made from recycled materials.	1.00*	.57
	I have switched products for ecological reasons.	1.40	.79
	When I have a choice between two equal products, I purchase the one less harmful to other people and the environment.	1.40	.71
	I make a special effort to buy household chemicals such as detergents and cleansing solutions that are environmentally friendly. I have avoided buying a product because it had potentially harmful environmental effects.	1.29 1.27	.68 .69

Notes: ^a Items were measured on a 7-point scale. The other items were assessed on a 5-point scale.
* Reference indicators
All factor loadings are significant (p<.01).

TABLE 2
Correlation-Variance-Covariance Matrix for Latent Constructs

	Collectivism	PCE	Environmental Concern	Green Purchase
Collectivism	.401	.114	.025	.017
PCE	.224	.650	.321	.145
Environmental Concern	.035	.351	1.288	.326
Green Purchase	.044	.300	.480	.359

Note: Variances are on the diagonal. Correlations are in the lower triangle and covariances are in the upper triangle.

TABLE 3
Parameter Estimates and Summary of Model-Fit Statistics

Relationship From → To		Proposed Model		Final Model	
		Unstd.	Std.	Unstd.	Std.
H1	Collectivism → Environmental Concerns	.11 ^a	.06	—	—
H2	Collectivism → PCE	.29	.23	.28	.22
H3	Collectivism → Behavior	-.01 ^a	-.01	—	—
H4	Environmental Concerns → Behaviors	.13	.44	.23	.44
H5	PCE → Behaviors	.11	.18	.13	.17
<i>Goodness-of-fit indices</i>					
χ^2 (d.f.)		237.10 (145)		237.77 (147)	
Goodness of Fit Index (GFI)		.92		.92	
Adjusted GFI (AGFI)		.90		.90	
Tucker-Lewis Index (TLI)		.94		.94	
Comparative Fit Index (CFI)		.95		.95	
RMSEA		.05		.05	

Notes: ^a $p > .05$, All other parameters are significant at $p < .01$.

chi-square. That is, the chi-square indices of the models without each of the paths were re-estimated and compared to the proposed model. The paths from collectivism (1) to environmental concerns (H1) and (2) to behaviors (H3) were tested and found not to yield significant changes in chi-square: (1) $\chi^2_{\text{difference}} = .65$, d.f.=1, $p > .1$, (2) $\chi^2_{\text{difference}} = .03$, d.f.=1, $p > .1$. Thus, these paths were removed from the original model as they did not significantly contribute to an improvement of the model fit. Parameter estimates for the revised model are presented in Table 3. The modified model also accounts for the data well; $\chi^2 = 237.77$, d.f.=147, $p < .01$; GFI=.92; AGFI=.90; TLI=.94; CFI=.95; RMSEA=.05. While the fit of the modified model did not improve much from the original model, it is presented as the final model since it is more parsimonious without any non-significant causal linkages. See the final model in Figure 2.

DISCUSSION

As public concern for the environment increases, green marketing, which appeals to consumers with products that are “green” or “environmentally friendly,” emerged as a new strategy. Ecologically themed product claims, such as “safe for the environment” and “biodegradable” (Hastak, Horst, and Mazis 1994), became common in the 1980s (Davis 1993; Ottman 1998). However, there is skepticism about how committed consumers are to environmentally friendly products in the real marketplace. Not all people who consider themselves environmentally concerned purchase and consume products environmentally positioned.

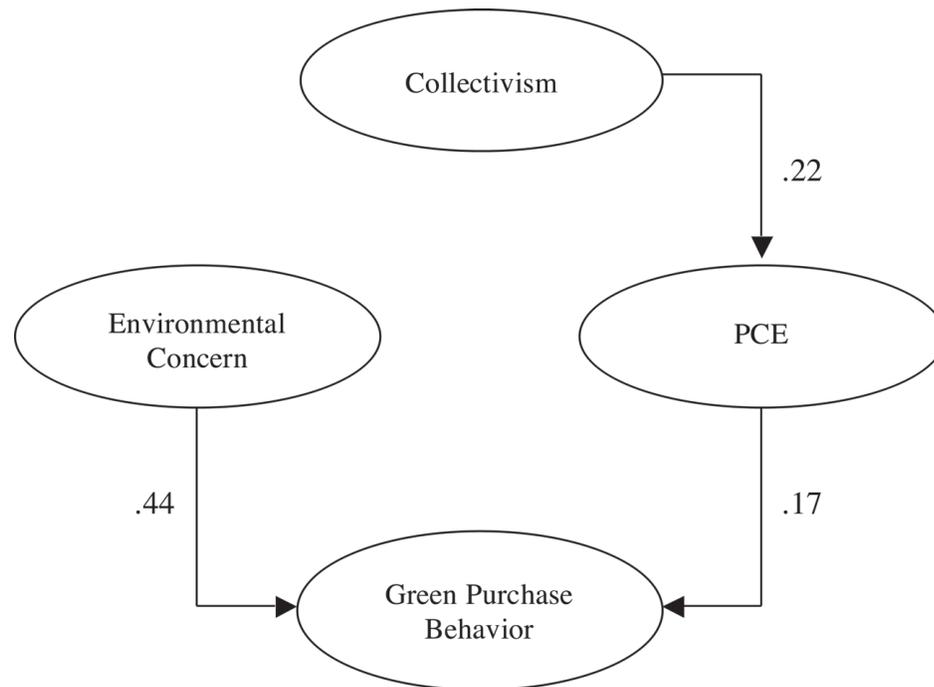
Past studies of environmental or ecological concern have examined this environmental concern as an attitude toward the environment and as reflected in past behaviors. Few studies have attempted to model the psychological determinants of ecological consumption (see Ellen, Wiener, and Cobb-Walgreen 1991 for a notable example) and no empirical research has tested a theoretical model integrating consumer values and environmental concern and assessing their influence on green purchase decisions. The study presented in this paper provides a deeper understanding of green

buying behavior by focusing on how collectivism, environmental concern, and PCE drive ecological consumptions as well as how relate to each other.

As the starting point for the model presented in this paper, collectivism, defined as an individual-level value orientation, appeared to positively influence individuals’ tendency to buy green products, but only through their positive beliefs about self-efficacy. Collectivistic individuals who value group goals and cooperation might be highly motivated to make proenvironmental choices by having stronger beliefs that their behavior would make a difference in mitigating environmental problems. Greater perceived self-efficacy directly influences the likelihood that consumers actually engage in green purchase behavior. These findings seem to reflect the unique nature of proenvironmental behavior. Unlike general product purchase decisions, ecological consumption choices are future and group oriented. That is, instead of instant gratification for the buyer, using green products often provides benefits for the entire society in the long term. Continuous reinforcement of self-efficacy should be provided for further promoting consumer commitment to green purchase. Environmental concerns also had a direct, positive influence on green purchase, suggesting that consumers who possess strong environmental concern may be interested in consumption of products that reflect that concern. However, environmental attitudes or concerns that reflect an individuals’ orientation or belief toward the environment specifically appear to be not related to their collectivistic tendencies at a more general level.

Theoretically, the approach used in this study resembles the conceptual framework of several previous studies on proenvironmental behaviors that emphasize the role of intervening variables between values and behavior (Homer and Kahle 1988; McCarty and Shrum 1993, 1994, 2001). Findings of this study also highlight the importance of consumer attitudes towards issues closely related to the behavior of interest in understanding the relationship between values and behavior. Fundamental values that individuals hold at an abstract level can motivate and drive behav-

FIGURE 2
Modified Model



Note: All the path parameters are standardized coefficients and significant ($p < .01$).

ior, but attitudes and beliefs measured with regards to a particular object or topic may intervene between the abstract values and the specific behavior. Therefore, a better predictor of target behavior can be obtained by considering the level of specificity of attitudes and behavior or motivational factors such as personal efficacy and behavioral intentions.

In practical terms, findings of this study offer implications for marketers and public policy makers who promote green products or programs for proenvironmental behavior. Taken together, the results suggest that it is important to increase consumer awareness of the environmental issues and enhance the perceived efficacy of their contribution to improving them. Applied to the segmentation and targeting strategies, promotional messages can be tailored to collectivistic people with an appeal that emphasizes the importance of their role in improving the environment as an achievement of group goals such as the society's well-being. For example, the portrayal of an individuals' green behavior contributing to the welfare of the community they belong to might effectively encourage people to act proenvironmentally. For those who are already environmentally concerned, an emphasis on success they can yield by taking environmentally conscious actions might be effective for promoting their ecological purchase and consumption.

LIMITATIONS AND SUGGESTIONS FOR FUTURE RESEARCH

As with any other studies using a student sample, the findings of this study might not represent consumers at large. A replication of this study with more general consumers of a wide range in their characteristics might be necessary to attest the applicability of the

model to the broader public. Similarly, the model presented in this paper was tested for green buying decisions only, so the interrelationships among the variables might vary with different types of proenvironmental behavior such as recycling or energy saving behavior.

The conceptualization of collectivism and its relationship to other related variables in the model needs future work. Although not significant, collectivism appeared to have a negative direct effect on green purchase, contrary to the expectation. A stream of research on the value orientations of collectivism and individualism suggests an explanation for this potentially negative relationship between collectivism and proenvironmental behavior. Collectivistic individuals see themselves as a part of one or more groups they belong in and emphasize the values and norms of those in-groups (Triandis 1995). Accordingly, individuals with more collectivistic tendencies put a greater emphasis on the interests of members of their in-groups than the welfare of the general public comprising outsiders as well. Collectivistic people are more likely to pursue the goals of their in-groups than those of out-groups or the public at large when these goals are in conflict. By contrast, individuals with individualistic orientations tend not to make a sharp distinction between in-groups and out-groups when responding to the needs of others and they often meet outsiders and form new in-groups (Triandis 1990; Triandis, McCusker, and Hui 1990). As a result, individualistic people are more open to new ideas and behaviors, whereas collectivistic people tend to retain traditional ideas and be reluctant to change their behaviors and habits (Triandis 1972). These alternative predictions for the effects of collectivism on ecological behavior warrant future research.

In line with the relevant literature, the value-attitude-behavior structure proved useful for understanding the predictors of environmentally conscious behavior and their interrelationships. Future research should continue to delve into this question as to what drives ecologically friendly behaviors by incorporating more cultural and psychological factors. A more comprehensive model could be constructed in which more relevant variables are identified and the related variables are laid out from general to specific with regards to the issue of interest or context of target behavior.

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