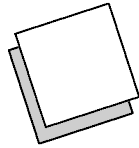


*An executive summary for managers and executive readers can be found at the end of this article*



## Targeting consumers who are willing to pay more for environmentally friendly products

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**Keywords** *Green marketing, Consumer behaviour, Segmentation, Environment, Canada*

**Abstract** *Concerns related to the environment are evident in the increasingly ecologically conscious marketplace. Using various statistical analyses, investigate the demographic, psychological and behavioral profiles of consumers who are willing to pay more for environmentally friendly products. Finds that this segment of consumers were more likely to be females, married and with at least one child living at home. They reported that today's ecological problems are severe, that corporations do not act responsibly toward the environment and that behaving in an ecologically favorable fashion is important and not inconvenient. They place a high importance on security and warm relationships with others, and they often consider ecological issues when making a purchase. Managerial implications for green marketers and suggestions for future research are discussed.*

### Concerns related to the environment

Concerns related to the environment are evident in the increasingly environmentally conscious marketplace. Over the years, a majority of consumers have realized that their purchasing behavior had a direct impact on many ecological problems. Customers adapted to this new threatening situation by considering environmental issues when shopping (e.g. checking if the product is wrapped in recycled material) and by purchasing only ecologically compatible products (e.g. biodegradable paint, CFC-free hairspray or unbleached coffee filters). Perhaps the most convincing evidence supporting the growth of ecologically favorable consumer behavior is the increasing number of individuals who are willing to pay more for environmentally friendly products.

In 1989, 67 percent of Americans stated that they were willing to pay 5-10 percent more for ecologically compatible products (Coddington, 1990). By 1991, environmentally conscious individuals were willing to pay between 15-20 percent more for green products (Suchard and Polonsky, 1991). By 1993, Myburgh-Louw and O'Shaughnessy (1994) conducted a mail survey of female consumers in the UK to examine their perceptions of environmental claims on the packaging of clothes detergents. They found

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## Corporate focus

that 79 percent of their sample agreed to pay up to 40 percent more for a product which was identical in every respect to their own brand and which had been proven to be green.

An important challenge facing marketers is to identify which consumers are willing to pay more for environmentally friendly products. It is apparent that an enhanced knowledge of the profile of this segment of consumers would be extremely useful. The closer we move to an understanding of what causes individuals to pay more for green products, the better marketers will be able to develop strategies specifically targeted at these consumers.

Our purpose in this study was twofold:

- (1) to identify a profile of consumers who are likely to pay more for environmentally friendly products; and
- (2) to elaborate marketing strategies that arise from an improved understanding of the profile of this segment of consumers.

Given the shifts in customer buying criteria toward environmental responsibility, corporate focus on this segment may provide a source of distinctive competitive advantage in the future. It is conceivable that at some time in the future, the idea of “environmental justice” may be accorded a status as high as that wielded by the concept of civil rights in contemporary USA (Noah, 1994).

### Profiles of green consumers: a literature review

Following an exhaustive review of the relevant literature, several factors that may influence consumers’ willingness to pay more for environmentally friendly products have been identified. These factors can be classified into five categories: demographics, knowledge, values, attitudes and behavior. Figure 1 proposes a theoretical framework for these factors. A review of the literature supporting the relationships posited in Figure 1 follows.

#### *Consumers’ demographic characteristics*

Efforts to identify environmentally friendly consumers can be traced back to the early 1970s. Berkowitz and Lutterman (1968), as well as Anderson and Cunningham (1972), were pioneers in studying the profile of socially responsible consumers. Overall, their combined results portray a highly socially conscious person as female, pre-middle aged, with a high level of education (finished high school) and above average socioeconomic status.

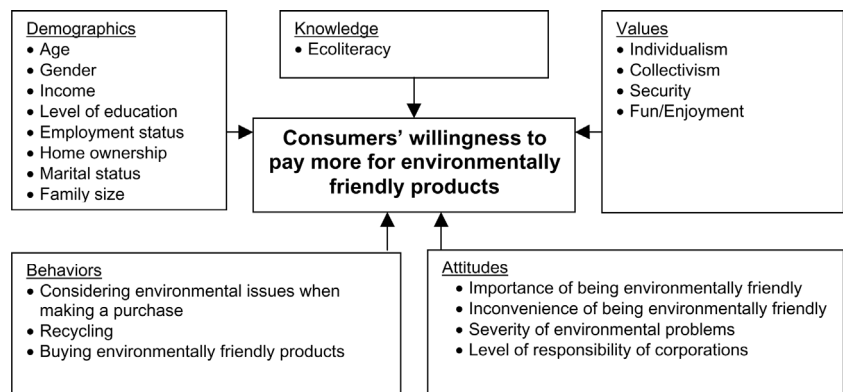


Figure 1. Conceptual framework

## Ecologically compatible manner

In the past two decades, the results of Berkowitz and Lutterman (1968) and Anderson and Cunningham (1972) were sometimes supported, but often not. For example, recent studies found that females tend to be more ecologically conscious than men (McIntyre *et al.*, 1993; Banerjee and McKeage, 1994). However, Reizenstein *et al.* (1974) found that only men were willing to pay more for control of air pollution, and Balderjahn (1988) reported that the relationship between environmentally conscious attitudes and the use of non-polluting products was more intensive among men than among women.

Following Berkowitz and Lutterman's (1968) study, Henion (1972) also thought that consumers with medium or high incomes would be more likely to act in an ecologically compatible manner due to their higher levels of education and therefore to their increased sensitivity to social problems. However, the results did not support his hypothesis: environmentally friendly behavior was consistent across income groups. Moreover, Sandahl and Robertson (1989) found that the environmentally conscious consumer is less educated and has a lower income than the average American. This brought them to conclude that income and education are not good predictors of environmental concern or purchase behavior.

Early research identified the green consumer as being younger than average (Berkowitz and Lutterman, 1968; Anderson and Cunningham, 1972; Van Liere and Dunlap, 1981). Surprisingly, this trend has been reversed in the last decade and several recent studies identified the green consumer as being older than average (Sandahl and Robertson, 1989; Vining and Ebreo, 1990; Roberts, 1996).

Although most findings about the impact of consumers' demographic characteristics on their environmentally conscious behavior are contradictory (Roberts, 1996), it is clear that they exert a significant influence. However, most authors agree that demographics are less important than knowledge, values and/or attitude in explaining ecologically friendly behavior (Webster, 1975; Brooker, 1976; Banerjee and McKeage, 1994; Chan, 1999).

## Consumer research

### *Consumers' knowledge or ecoliteracy*

Knowledge is recognized in consumer research as a characteristic that influences all phases in the decision process. Specifically, knowledge is a relevant and significant construct that affects how consumers gather and organize information (Alba and Hutchinson, 1987), how much information is used in decision making (Brucks, 1985) and how consumers evaluate products and services (Murray and Schlacter, 1990).

Once again, empirical support for the influence of consumers' environmental knowledge on their ecologically favorable behavior is contradictory. On one hand, Maloney and Ward (1973) reported no significant linkage between environmental knowledge and ecologically compatible behavior. On the other hand, Vining and Ebreo (1990), as well as Chan (1999), have shown that knowledge about ecological issues is a significant predictor of environmentally friendly behavior. Amyx *et al.* (1994) even found that individuals highly knowledgeable about environmental issues were more willing to pay a premium price for green products.

Ecoliteracy was developed by Laroche *et al.* (1996) to measure the respondent's ability to identify or define a number of ecologically-related symbols, concepts and behaviors. It was found to be correlated with some attitudes and behavior toward the environment.

## Two values that influence consumer behavior

### *Consumers' values*

Schwartz (1994) defines human values as desirable goals, varying in importance, that serve as guiding principles in people's lives. McCarty and Shrum (1994) believe that it makes intuitive sense that the values one holds would influence behaviors that work for a common or societal good. Recycling, for instance, is a behavior that someone "ought" to do, even though the immediate individual rewards for engaging in it are usually scarce. Therefore, if an individual engages in recycling, it would be expected to be driven by strong values. Hence, we may gain a much clearer understanding of the motivational determinants of environmentally friendly behavior by considering the impact of values.

According to Triandis (1993), two major values that influence consumer behavior are individualism and collectivism. On one hand, individualism represents how much a person focuses on his/her independent self (i.e. how he/she depends only on himself or herself). Individualist people engage in voluntary associations and they make sure that they remain distinct individuals, even when they belong to groups. They also compete with others for status, which depends on their accomplishments much more than on their group memberships (Triandis, 1993). We suspect that this type of individual is not very conducive to environmental friendliness. On the other hand, collectivism implies cooperation, helpfulness, and consideration of the goals of the group relative to the individual. Being a collectivist means that one may forego individual motivations for that which is good for the group. The work of Triandis (1993) and McCarty and Shrum (1994) suggest that collectivist people tend to be friendlier to the environment, while individualistic people tend to be more unfriendly.

In addition, McCarty and Shrum (1994) investigated the impact of two other relevant values on consumers' environmentally conscious behavior: fun/enjoyment and security. It was found that the fun/enjoyment value was positively related to attitudes about the importance of recycling and to the recycling behavior. This relationship makes sense if one considers that those who value fun and enjoyment in life may see a fulfillment of this end-state through interaction with the environment. The security value factor was not significantly related to either the importance of recycling or the recycling behavior.

## The two most studied attitudes

### *Consumers' attitudes*

The two most studied attitudes in the ecological literature, with respect to environmentally friendly behavior, are importance and inconvenience. Amyx *et al.* (1994) define perceived importance, with respect to the environment, as the degree to which one expresses concern about ecological issues. In other words, importance is simply whether consumers view environmentally compatible behaviors as important to themselves or society as a whole. Inconvenience refers to how inconvenient it is perceived for the individual to behave in an ecologically favorable fashion. For example, a person may feel that recycling is important for the long-run good of the society, but he or she may also feel that it is personally inconvenient. Similarly, a consumer may know that single-serve aseptically packaged juices or puddings will harm the environment, but still buy them because they are convenient.

McCarty and Shrum (1994) studied the impact of importance and inconvenience of recycling on the behavior of recycling. They found that the relationship between inconvenience and recycling was in the expected direction, that is, the more individuals believed recycling was inconvenient,

## The socially conscious customer

the less likely they were to recycle. By contrast, beliefs about the importance of recycling were not significantly related to recycling behavior. Therefore, it appears that regardless of how important individuals believed recycling to be, the perception of the inconvenience of the recycling activity had a greater influence on their actions.

According to Banerjee and McKeage (1994), green consumers strongly believe that current environmental conditions are deteriorating and represent serious problems facing the security of the world. Conversely, consumers who do not engage in environmentally friendly behavior perceive that ecological problems will “resolve themselves.” Therefore, an individual’s perception about the severity of ecological problems might influence his/her willingness to pay more for ecologically compatible products.

Webster (1975) found that the socially conscious customer feels strongly that he/she can do something about pollution and tries to consider the social impact of his/her buying behavior. According to Wiener and Sukhdial (1990), one of the main reasons that stops individuals from engaging in ecologically favorable actions is their perceived level of self-involvement toward the protection of the environment. As the authors point out, many individuals may have high ecological concern, but feel that the preservation of the environment is the responsibility of the government and/or big corporations. We might expect this attitude to impact the willingness of consumers to spend more for environmentally friendly products.

### *Consumers’ behaviors*

Suchard and Polonski (1991) stipulate that ecologically conscious consumers will try to protect the environment in different ways (e.g. recycling, checking that a package is made of recycled material, purchasing only green products). However, it is not clear how consumers’ willingness to spend more for green product will be correlated with other ecologically favorable behaviors. Pickett *et al.* (1993) state that marketers must exercise caution when attempting to extend environmental initiatives from one ecologically conscious behavior to another. For example, those consumers who recycle paper may not be the same consumers who purchase recycled handwriting paper.

## Exploratory research

### **Methodology**

Our research is exploratory in nature because, as far as we know, no study ever investigated factors that influence consumers’ willingness to pay a higher price for environmentally friendly products.

### *Sampling procedures and data collection*

The population targeted for this study consisted of subjects residing in a large North-American city. The data collection was confined to a selected number of census tracts in municipalities located in this city and its surrounding areas. A total of 22 census tracts in 17 municipalities were chosen for the survey. We made sure that environmentally friendly programs (e.g. recycling programs) were in place and properly advertised in each municipality. This was necessary to avoid biased or unrealistic answers from respondents. For example, if a city does not have recycling centers or services, its citizens could not recycle, whether they wanted to or not. Furthermore, purchases of recyclable products would be useless in that context.

Within each of the census tracts in the selected municipalities, a number of streets were picked at random. The questionnaires were administered door to

## Questionnaire

door. Data collection was done mostly on weekends and evenings when respondents were more likely to be at home. Respondents willing to participate in the survey were given a prepaid envelope to be filled in at their own convenience and mailed directly to the researchers. A total of 2,387 questionnaires were distributed and 907 usable questionnaires were returned, which represented a very satisfactory return rate of 38 percent.

### *Measures*

A structured non-disguised questionnaire was designed to gather the data required for this research. Prior to sending the survey, a pre-test was done and minor modifications were made. The questionnaire was divided into five parts. The first part measured ecoliteracy with seven questions (Appendix). The answers given by the respondents indicated how much they knew about environmental issues. The second part measured attitudes of consumers toward a variety of topics related to the environment. Respondents were asked to read 17 statements and specify on a nine-point Likert scale whether they agreed or disagreed with each one. Most items were adapted from previous studies (McCarty and Shrum, 1994; Roberts, 1996).

The third part of the questionnaire measured behaviors of respondents toward the environment. This section contained five questions asking the respondents how often they engaged in particular friendly/unfriendly behaviors. These behaviors were recycling, considering environmental issues when making a purchase and buying environmentally harming products (i.e. plastic utensils and styrofoam cups). The fourth part measured consumer values. Items were adapted from the work of Rokeach (1973). Respondents had to rate ten values in terms of their importance to themselves as guiding principles in their lives. Each answer was recorded by using a nine-point Likert scale (very unimportant to very important). The fifth part measured the following demographic characteristics: gender, marital status, age, income, family size, home ownership, education, and employment status. Items used to measure attitudes, behaviors and values are presented in Table I.

## Reliability tests

Reliability tests were conducted on each factor. Some items were recoded when necessary. Results show that the Cronbach alphas varied from 0.65 to 0.87 for all our constructs, which is satisfactory for an exploratory study (Hair *et al.*, 1998). Factor analyses were also conducted to evaluate the ability of the items to measure each construct. These analyses were performed using the maximum likelihood method to extract the factors and the oblimin rotation to enable a better interpretation of these factors. Results of these reliability tests are presented in Table I.

### *Measure of the endogenous variable*

Three questions were used to measure respondents' willingness to pay more for environmentally friendly products (Table II). Each question was measured on a nine-point Likert scale (strongly disagree to strongly agree). These questions were spread out in the questionnaire among the 17 items measuring attitudes.

Based on these three questions (Table II), we divided our sample in three groups:

- (1) consumers willing to pay a higher price for green products;
- (2) consumers who are not willing to pay more for green products; and
- (3) undecided consumers.

Constructs	Measures	Factors	Alpha ( $\alpha$ )
<i>Attitudes<sup>a</sup></i>			
Severity of environmental problems	In our country, we have so much electricity that we do not have to worry about conservation	0.825	0.87
	Since we live in such a large country, any pollution that we create is easily spread out and therefore of no concern to me	0.812	
	With so much water in this country, I don't see why people are worried about leaky faucets and flushing toilets	0.811	
	Our country has so many trees that there is no need to recycle paper	0.749	
	The earth is a closed system where everything eventually returns to normal, so I see no need to worry about its present state	0.623	
Importance of being environmentally friendly	Recycling will reduce pollution	0.733	0.65
	Recycling is important to save natural resources	0.729	
	Recycling will save land that would be used as dumpsites	0.605	
Level of responsibility of corporations	Packaged food companies are acting responsibly toward the environment	0.868	0.67
	Paper companies are concerned about the environment	0.754	
Inconvenience of being environmentally friendly	Keeping separate piles of garbage for recycling is too much trouble	0.866	0.71
	Recycling is too much trouble	0.744	
	I hate to wash out bottles for recycling	0.698	
	Trying to control pollution is much more trouble than it is worth	0.631	
<i>Behaviors<sup>b</sup></i>			
Recycling	Using the blue or green box (bag) for recycling		0.68
	When buying something wrapped, check that it is wrapped in paper or cardboard made of recycled material	0.820	
Considering environmental issues when making a purchase	Refusing to buy products from companies accused of being polluters	0.672	0.70
	Buying environmentally harming products	0.821	
Buying environmentally harming products	Buying plastic knives, forks, or spoons	0.821	0.70
	Buying styrofoam cups	0.794	
<i>Values<sup>c</sup></i>			
Collectivism	Loving (i.e. affectionate, tender)	0.798	0.71
	Helpful (i.e. working for the welfare of others)	0.750	
	Warm relationships with others	0.736	
Security	Security		0.65
	Excitement	0.826	
Fun/enjoyment	Fun and enjoyment of life	0.682	0.73
	A sense of accomplishment	0.843	
Individualism	Self-respect	0.820	0.73
	Self-fulfillment	0.774	
	Independent (i.e. self-reliant, self-sufficient)	0.552	

**Notes:**

<sup>a</sup> Respondents were asked to give their opinion toward a variety of topics related to the environment. Items were measured on a nine-point Likert scale (strongly disagree to strongly agree)

<sup>b</sup> Respondents were asked how often they engaged in such environmentally friendly activities. Items were measured on a nine-point Likert scale (never to always)

<sup>c</sup> Respondents were asked to rate each value on how important they are as guiding principles in their life. Items were measured on a nine-point Likert scale (very unimportant to very important)

*Table I. Measures and reliability analyses*

To be admissible in the first group, respondents had to answer to all three questions with a score of "nine." Respondents were included in the second group if they answered to all three questions with a score of "one" or "two." Among the 907 respondents in the sample, 119 are considered as willing to pay a higher price for environmentally friendly products and 122 are

**A preliminary analysis of the data**

Questions <sup>a</sup>	Factors	Alpha (α)
1. It is acceptable to pay 10 percent more for groceries that are produced, processed, and packaged in an environmentally friendly way	0.856	
2. I would accept paying 10 percent more taxes to pay for an environmental cleanup program	0.797	0.84
3. I would be willing to spend an extra \$10 a week in order to buy less environmentally harmful products	0.776	

**Note:**

<sup>a</sup> Items were measured on a nine-point Likert scale (strongly disagree to strongly agree)

*Table II. Questions used to measure consumer's willingness to pay more for environmentally friendly products*

classified as the opposite. Therefore, we will qualify the 666 others respondents (907 – 119 – 122 = 666) as being “undecided.” In order to identify factors that influence consumers’ willingness to spend more for green products, we will only analyze the first two groups.

**Analyses and results**

Our results are presented according to the methodological approach defined in the previous section. We begin by a comparison of the demographic profile of consumers who are willing to pay more for ecologically compatible products and their unwilling counterpart. This approach will help reveal differences between these two segments.

*Comparison of the two demographic profiles*

A preliminary analysis of the data reveals that our sample is composed of a majority of female respondents (56 percent), home-owners (86 percent), currently married (77 percent), and with at least one child at home (61 percent). Nearly half of our sample is aged between 40 and 59 years (48 percent), are university graduates (44 percent), have a household income of at least \$50,000 (47 percent) and work more than 30 hours a week (49 percent).

We conducted crosstabs analyses on the eight demographic variables to determine which ones differentiate the most the two groups of respondents. Statistical assumptions concerning the validity of these analyses (e.g. normality, frequency and presence of outliers) were verified. Among the eight demographic variables studied, only “gender,” “marital status” and “number of children living at home” differentiated the two segments. The details of these tests are presented in Tables III-V.

Gender somehow influences consumers’ willingness to pay more for green products in a statistically significant way ( $\chi^2 = 5.91, p = 0.015$ ). Table III

Respondents' gender	Frequency		Percentage	
	Would pay more	Would not pay more	Would pay more	Would not pay more
Female	75	58	57	43
Male	43	63	40	60
Total	118	121		
$\chi^2$ of Pearson = 5.91		$(p = 0.015)$		V of Cramer = 0.15

*Table III. Respondents' gender and their willingness to pay more for environmentally friendly products*



**Consumers' demographic profile**

Respondents' marital status	Frequency		Percentage	
	Would pay more	Would not pay more	Would pay more	Would not pay more
Single, separated or divorced	20	36	36	64
Married	97	86	53	47
Total	117	122		
$\chi^2$ of Pearson = 5.34	(p = 0.025)		V of Cramer = 0.14	

*Table IV. Respondents' marital status and their willingness to pay more for environmentally friendly products*

Number of children living with the respondent	Frequency		Percentage	
	Would pay more	Would not pay more	Would pay more	Would not pay more
No child	54	71	43	57
At least one child	54	42	56	44
Total	108	113		
$\chi^2$ of Pearson = 3.71	(p = 0.037)		V of Cramer = 0.13	

*Table V. Number of children living with the respondents and their willingness to pay more for environmentally friendly products*

indicates that 57 percent of females would pay more for green products, while this percentage is only 40 percent for males. This result finds ample support in the literature. Most studies have identified females as being more environmentally concerned than males (Berkowitz and Lutterman, 1968; Webster, 1975; McIntyre *et al.* 1993; Banerjee and McKeage, 1994).

As expected, individuals who are married (56 percent) and have children living at home (57 percent) are more willing to pay a higher price for green products. It may be suggested that these individuals are more inclined to think of how a ruined environment may negatively impact not only on their partner, but on their children's future. This could be a strong motivation for married couples to behave in an ecologically conscious fashion. Overall, it seems that married people with children may be more prone to put the welfare of others before their own. Brooker (1976) came up with similar findings.

The other variables used to define the consumers' demographic profile did not differentiate consumers who are willing to spend more for green products from their unwilling counterpart. In other words, the age of the respondent ( $p = 0.97$ ), his level of education ( $p = 0.97$ ), his household income ( $p = 0.76$ ), the fact that he is a home owner or not ( $p = 0.32$ ) and his work status ( $p = 0.25$ ) do not influence the consumers' willingness to pay a higher price for ecologically safe products in a statistically significant way.

*Factors that influences consumers' willingness to pay more for environmentally friendly products*

We conducted *t*-tests on each construct of the conceptual framework in order to reveal significant differences. Then, we ran a stepwise discriminant analysis on all the factors to identify the ones that differentiate the most the two segments of consumers. Statistical assumptions regarding these tests were verified (i.e. normality, homogeneity of variance/covariance matrices). Before running the discriminant analysis, we split the sample in two groups: the first group (70 percent of respondents) was used to estimate the discriminant function, while the second group (30 percent of respondents) was employed to

## Results from the *t*-tests

validate the results. Before presenting the factors identified by the discriminant analysis, we believe that it is important to evaluate the quality of the discriminant function. The relevant statistics are presented in Table VI.

Table VI indicates that the discriminant function's  $\chi^2$  is 107.8, which proves that it is largely significant ( $p < 0.001$ ). Furthermore, the percentage of cases correctly classified, calculated from the validation sample, is 78.2 percent, which is much higher than the proportional chance criterion of 50.1 percent.

Results from the *t*-tests and the discriminant analyses are presented in Table VII. At this point, it is appropriate to recall that each construct was evaluated on a nine-point Likert scale, except the ecoliteracy construct, which was rated on a scale from 0 (poor knowledge) to 1 (excellent knowledge). The Appendix and Table I present the items used to measure each independent factor.

Eigenvalue	Canonical correlation	Wilks' Lambda	Chi square	Grouped cases correctly classified <sup>a</sup> (%)
0.604	0.614	0.623	$\chi^2 (6) = 107.8$ $p < 0.001$	Willing respondents: 80.2 Unwilling respondents: 76.2 Total = 78.2

### Note:

<sup>a</sup> Classification was based on a validation sample (30 per cent of the original sample)

Table VI. Characteristics of the discriminant function

Factors <sup>a</sup>	<i>t</i> -tests Means <sup>b</sup>		Value of <i>t</i>	Discriminant analysis	
	Would pay more	Would not pay more		Wilks' Lambda	Loadings (L)
1. Considering environmental issues when making a purchase	5.81	3.89	- 7.16 <sup>c</sup>	0.83 <sup>c</sup>	0.57
2. Inconvenience of being environmentally friendly	1.73	3.05	6.36 <sup>c</sup>	0.73 <sup>c</sup>	- 0.56
3. Importance of being environmentally friendly	8.37	7.36	- 5.60 <sup>c</sup>	0.68 <sup>c</sup>	0.47
Severity of environmental problems	1.14	1.70	4.64 <sup>c</sup>		- 0.33
6. Level of responsibility of corporations	3.72	4.60	3.30 <sup>c</sup>	0.62 <sup>c</sup>	- 0.29
5. Collectivism value	8.08	7.64	- 2.99 <sup>c</sup>	0.64 <sup>c</sup>	0.23
4. Security value	8.29	7.87	- 2.19 <sup>d</sup>	0.66 <sup>c</sup>	0.20
Recycling behavior	8.45	7.99	- 1.75		0.34
Individualism value	8.30	8.23	- 0.52		0.03
Fun/enjoyment value	6.73	6.66	- 0.34		0.12
Buying environmentally harming products	6.93	6.98	0.21		- 0.08
Environmental knowledge	7.23	7.23	- 0.14		0.07

### Notes:

<sup>a</sup>Numbers represent the factors' order of entry in the discriminant analysis ( $\alpha = 0.05$ )

<sup>b</sup> Items were measured on a nine-point Likert scale, except the knowledge construct, which was evaluated on a scale from 0 (poor knowledge) to 1 (excellent knowledge)

<sup>c</sup> Statistically significant ( $\alpha < 0.01$ )

<sup>d</sup> Statistically significant ( $\alpha < 0.05$ )

Table VII. Results of *t*-tests and the discriminant analysis

## Green products

Results from the discriminant analyses and the student tests indicate that attitudes are very good predictors of consumers' willingness to spend more for green products. In fact, *t*-tests revealed that all four attitudes differentiated the two segments of respondents in a statistically significant way, whereas salient differences were observed for only two values (i.e. collectivism and security) and one behavior (i.e. considering environmental issues when making a purchase). Furthermore, half of the factors who entered the discriminant function are attitudes. This is consistent with many studies in which attitudes were found to be excellent predictors/moderators of ecologically friendly behavior (Webster, 1975; Banerjee and McKeage, 1994; McCarty and Shrum, 1994; Chan, 1999).

Consumers willing to pay more for green products reported that today's ecological problems are severe, that corporations do not act responsibly toward the environment and that behaving in an ecologically favorable manner is important and not inconvenient. They place a high importance on security and warm relationships with others, and they often consider ecological issues when making a purchase. Conversely, consumers unwilling to pay more for green products reported that companies are acting responsibly toward the environment and they admit (in average) that they do not consider ecological issues when making a purchase. These consumers attributed a lower score to the severity of ecological problems and to the importance of being ecologically friendly. These findings imply many managerial implications for green marketers, which are discussed in the next section.

### Discussion and managerial implications

This study provides both a theoretical and practical contribution to understanding the determinants of consumers' willingness to pay more for environmentally friendly products. A discussion about the impact of consumers' attitudes, values and behaviors follows.

## The strength of relationships

### *The impact of attitudes*

A clearly important finding of this study involves the strength of the relationships between attitudes and consumers' willingness to spend more for green products. The attitude that showed the most discriminating power between the two segments of consumers is the perceived inconvenience of being environmentally friendly. This study reveals that consumers willing to pay more for green products did not perceive it inconvenient to behave in an ecologically favorable manner. The opposite was found for the unwilling respondents. Therefore, it is of primary importance for marketers to advertise why it is convenient to purchase green products and to change consumer perceptions in a positive way. More and more companies educate consumers about the convenience of buying ecologically safe products. The Body Shop, for example, produces and promotes its product lines with environmental and social sensitivity as a major theme. Information cards, window displays, and videos are used throughout the store to inform the public on the environmental and social impacts of their purchasing decisions (Menon *et al.*, 1999). These in-store informational promotions focus on educating the customer about The Body Shop's natural product ingredients, earth-friendly manufacturing, and the policy of purchasing from developing countries (called "Trade Not Aid"). The education of the consumer is seen as an appropriate method for increasing perceived convenience and establishing credibility.

The second attitude that strongly differentiated the two segments of consumers is the perceived importance of being environmentally friendly. This research reveals that consumers willing to pay a higher price for green

## Responsibility of corporations

products perceive that it is very important to behave in an ecologically favorable way. Bei and Simpson's (1995) study also suggests that consumers' environmentally compatible behavior can be motivated by emphasizing the importance of environmental issues. Thus, marketers should communicate to the target audience that buying green products can have a significant impact on the welfare of the environment. Through a properly targeted advertising campaign, marketers can encourage positive attitudes and behaviors held by ecologically friendly people.

The third important attitude is the perceived level of responsibility of corporations. The results suggest that consumers who are willing to spend more for green products believe that firms do not act responsibly toward the environment, whereas the opposite was observed for unwilling respondents. Therefore, managers should persuade consumers that the protection of the environment is not the sole responsibility of businesses and that each individual can also make a difference. It is also of primary importance for marketers to provide positive feedback to consumers on a regular basis in order to show them that they really are making a difference. These actions would not only reinforce proper behavior from green consumers, but could also motivate less ecologically friendly individuals to behave in a more conscious manner.

This study reveals that both willing and unwilling consumers are preoccupied by the severity of ecological problems. With current high levels of consideration for the environment across the population, the potential benefits from enhancing concern may be illusory (Roberts, 1996). Thus, it is suggested that the major promotional task is to induce people to act on their concerns. For instance, popular slogans, such as "think globally, act locally," can be effective in enhancing favorable behavior. Advertising campaigns that portray individuals making a difference in combating environmental ills are also more likely to solicit the desired behavioral change.

## Important findings

### *The impact of values*

Two important findings were obtained with regard to the relationships between values and consumers' willingness to spend more for green products. As expected, ecologically conscious consumers reported that collectivism and security were important principles guiding their lives. This result is in line with the profile of environmentally friendly individuals (McCarty and Shrum, 1994). These consumers care about their relationships with others, which translates into a certain concern for the welfare of others. Such caring personalities indicate a certain predisposition to be environmentally friendly. In an attempt to promote ecologically favorable consumption, marketers may find it profitable to bring consumers to the realm of purchasing through packaging that stresses society welfare, security and warm relations as virtues of green consumption.

### *The impact of behaviors*

An important finding of this research is that consumers who consider environmental issues when making a purchase are more likely to spend more for green products. In fact, 80 percent of these respondents said they refuse to buy products from companies accused of being polluters. Companies who do not follow environmental regulations or who ridiculously take advantage of the green movement to increase sales are therefore exposed to customer boycott. For example, Procter & Gamble and Wal-Mart were publicly criticized for putting a green label on a brand of paper towels made of chlorine-bleached unrecycled paper and packaged in plastic, simply because the inner tube for the towel was made of recycled paper (Cairncross, 1992).

Businesses who seriously consider environmental issues may create a sustainable competitive advantage. For instance, the 3 Ps program (polluting prevention pays) of 3M, DuPont Corporation's commitment to 70 percent waste reduction by the year 2000, and McDonald Corporation's efforts to eliminate polystyrene clamshell packaging have been commended as progressive and exemplary steps in corporate environmental practices (Menon *et al.*, 1999). Another relevant example comes from BMW, the German auto maker, who designed (and marketed) its two-seater ZI in such a way that it can be disassembled and recycled. Moreover, the car has doors, bumpers, and panels made from recyclable thermoplastic. Based on this study, an important segment of customers would be willing to pay more for such environmentally friendly products.

## Behaviors

Surprisingly, the behaviors "recycling" and "buying environmentally friendly products" were not good predictors of consumers' willingness to pay more for green products. As stated by Pickett *et al.* (1993), marketers and policy-makers must exercise caution when attempting to extend environmental initiatives from one ecologically conscious behavior to another. For example, those consumers who recycle plastic may not be the same consumers who would pay more for low-phosphate detergent.

### *Other managerial implications*

This study reveals that a segment of consumers willing to spend more for environmentally friendly products is large enough to warrant marketers' attention. Similar conclusions were advanced by Coddington (1990), Suchard and Polonsky (1991) and Myburgh-Louw and O'Shaughnessy (1994). In this research, 13.1 percent of respondents (i.e. 119/907) indicated that they were willing to pay a higher price for green products, which represents a significant market segment for producers and distributors of ecologically compatible products. Based on demographic analyses, this study found married women with children to be more environmentally friendly. Marketers may aim at this easily identifiable segment as their prime target. Small World Products Group, for instance, targeted this segment and advertised their new line of ecological crackers, which were in the shape of endangered animals, made of natural ingredients and packaged with recycled materials. Finally, there is a large group of undecided consumers, and some may be persuaded to move to the willing group. There appears to be an opportunity for marketers to successfully create different strategies and to employ different appeals in order to convert some of the undecided to move into the willing segment.

## Discriminant analyses

### **Limitations, research opportunities and conclusion**

Being exploratory, this study raises more questions than it answers. For instance, the discriminant analyses did not fully explain the dichotomy between consumers willing to pay more for environmentally friendly products and their unwilling counterpart. Consequently, the choice of factors included in the conceptual framework (Figure 1) may not be exhaustive. What additional variable might also influence consumers' ecologically conscious behavior? It could be interesting to integrate factors related to the firms and their products, such as prices, brand image, advertisement or product quality, and it seems pertinent to address them in future research.

This study was based on a cross-sectional perspective, rather than on a longitudinal one, which limits the knowledge of the long-term impact of the factors in our model. Would longitudinal research produce different results from ours? In this context, it could prove interesting to study this

## Ecoliteracy was not a good predictor

phenomenon over a long-term horizon. Such a study would also enhance our understanding of the development of environmentally friendly behavior.

Do the results generated in this study apply to all types of ecological products? Would we obtain the same results at the international level? Or toward a commercial clientele? To answer these questions, researchers could eventually study the factors that influence consumers' willingness to spend more for ecologically compatible products, but from a completely different angle. Future research could, for example, be conducted in a specific industry (e.g. cosmetics), for a particular type of clientele (e.g. businesses) or in another region (e.g. Europe).

This research found that ecoliteracy was not a good predictor of consumers' willingness to spend more for green products. In fact, results from the *t*-tests indicated that the average ecoliteracy score was exactly the same for both segments of consumers. This contradicts many previous studies (Vining and Ebreo, 1990; Amyx *et al.*, 1994; Chan, 1999). In this research, ecoliteracy was measured by asking objective questions to respondents. It might be interesting to replicate a similar study and measure subjective knowledge, i.e. by asking consumers what they think they know. However, Rolston and di Benedetto (1994) warned researchers that measuring consumer knowledge about recycling is sometimes inappropriate for constructing an overall "green behavior" measure since even experts cannot agree on a product's effects on the environment. Thus, it may be unrealistic to expect the average consumer to make the right choice.

This research relied on self-reported answers to measure consumers' willingness to pay more for environmentally friendly products. However, respondents professing their willingness to spend more for green products may not actually do so in reality. This is analogous to the green movement in the UK in the early 1990s. Customers claimed they wanted to buy ecologically compatible products, but British supermarkets were overstocked with products that the same consumers later explained were too expensive (Pearce, 1990). Therefore, it might be useful to conduct a similar study with respondents who actually and consciously paid higher prices for green products.

## Conclusion

In conclusion, the major contributions of this study were the investigation of the profile of consumers willing to pay more for environmentally friendly products and the subsequent discussion of the implications for marketers. This research being exploratory, the results are only a spring-board for future research in a domain growing in theoretical and practical importance. The increase in media coverage of ecological deterioration, the recent influx of environmentally compatible products in the marketplace and the integration of ecological issues in both our educational and political systems point to the need for more research on the environmentally conscious consumer.

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#### Appendix.

1. Can you please tell me what this symbol means to you?



2. Can you explain what the blue box (bag) or green box (bag) is for?
3. To the best of your knowledge, what is the single most important source of air pollution on this planet?
  - 1 Cigarette smoke
  - 2 Automobiles
  - 3 Heavy industry
  - 4 Power Stations
  - 5 Don't know
4. What does the term "greenhouse effect" mean to you?
5. One sometimes hears or reads about "greenhouse gases". Please name a "greenhouse gas."
6. Taking all things that can be thought of as garbage in a household, what percentage of that garbage would you say can be recycled or composted? (*Circle one answer only*)
  - 1 10%
  - 2 30%
  - 3 50%
  - 4 70%
  - 5 90%
  - 6 Don't know
7. Under most recycling programs, which of these items cannot be recycled? (*Circle all that apply*)
  - Metal food cans
  - All plastic containers
  - Lightbulbs
  - Magazines, catalogs, and books
  - Newspapers

Figure A1. Test to measure the respondents' ecoliteracy



***This summary has been provided to allow managers and executives a rapid appreciation of the content of this article. Those with a particular interest in the topic covered may then read the article in toto to take advantage of the more comprehensive description of the research undertaken and its results to get the full benefit of the material present***

## **Executive summary and implications for managers and executives**

### ***The customers who are willing to pay more for “green” products***

*Increasing numbers of consumers are realizing that their purchasing behaviour directly affects many ecological problems. In 1989, 67 percent of consumers stated that they were willing to pay 5 to 10 percent more for ecologically compatible products. More recent surveys have suggested that significant numbers of consumers would be willing to pay up to 40 percent more for a “green” product. Laroche et al. seek to provide a profile of consumers who are likely to pay more for environmentally friendly products, and to put forward marketing strategies to attract them.*

*The research shows that consumers willing to pay more for environmentally friendly products are more likely to be female, married, with at least one child living at home. This group seem more likely to put the welfare of others before their own. They are perhaps more likely to think of how a ruined environment may affect their partner and their children’s future.*

*Consumers willing to pay more for green products report that today’s ecological problems are severe, that corporations do not act responsibly towards the environment and that behaving in an ecologically favourable way is important. They place a high importance on security and warm relationships with others, and often consider ecological issues when buying something. They do not believe that it is inconvenient to, for example, do without single-serve aseptically packaged juices or puddings, in the interests of protecting the environment.*

### ***How marketers can target green consumers***

*Since the opposite is true of consumers who are less willing to pay more for environmentally friendly products, marketers should advertise why it is convenient to purchase green products. The Body Shop, for example, uses information cards, window displays and videos throughout its stores to inform people about the environmental and social effects of their purchasing decisions. This information educates the consumer about The Body Shop’s natural product ingredients, earth-friendly manufacturing, and policy of purchasing from developing countries.*

*Marketers should also communicate to the target audience that buying green products can have a significant impact on the welfare of the environment. Marketers should persuade consumers that environmental protection is not the sole responsibility of business and that each individual can also make a difference. Marketers should regularly provide feedback to show consumers that they are making a difference.*

### ***Some words of warning***

*The research reveals that 80 percent of consumers who are more likely to spend more for green products say they refuse to buy products from companies accused of being polluters. Companies which do not follow environmental regulations or which try to exploit the green movement to increase sales are therefore exposed to consumer boycott. For example, Procter & Gamble and Wal-Mart were publicly criticized for putting a green label on a brand of paper towels made of chlorine-bleached, unrecycled paper and packaged in plastic, simply because the inner tube for the towels was made of recycled paper.*

*Respondents who claimed to recycle, and to buy environmentally friendly products, were not always those willing to pay more for green goods. Marketers should therefore take care when attempting to extend environmental initiatives from one ecologically conscious behaviour to another. For example, consumers who recycle plastic may not be those who would pay more for low-phosphate detergent.*

***Persuading the undecided***

*The research reveals that 13.1 percent of respondents are willing to pay a higher price for green products. But there is also a large group of undecided consumers. Marketers may be able to create different strategies and employ different appeals in order to convert some of the undecided consumers into the “willing” group.*

(A précis of the article “Targeting consumers who are willing to pay more for environmentally friendly products”. Supplied by Marketing Consultants for MCB University Press.)