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Do environmental attitudes predict organic purchasing and environmental organization involvement?

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Abstract:

The members of affluent Western societies have become increasingly aware of environmental issues. The increases in environmental awareness have created new environmentally conscious markets, such as organic foods and products, and organizations. This article looks at whether socio-demographic variables can predict environmental attitudes and whether there is a connection between environmental attitudes and the realization of behaviours that promote environmental protection (organic food purchases and environmental group membership). In Edmonton, Alberta, Canada and surrounding communities, health and environment attitudes as well as demographic information were collected through intercept surveys administered at locations that ensured a representative sample of the communities ($n = 389$). Regression analyses in STATA 7.0 were used to determine the predictive abilities of environmental attitudes and socio-demographic variables on environmental attitudes and environmental behaviours respectively. It was found that socio-demographic variables provided limited explanatory power for environmental attitudes and that while environmental attitudes and behaviours are correlated, environmental attitudes are unable to accurately predict environmental behaviours. The lack of explanatory power may be due to the scale used, or more likely due to the general acceptance and knowledge of environmental issues. As environmental attitudes become more commonplace, differences in socio-demographic factors may no longer have the predictive ability once seen in past studies.

Environmental awareness has been increasingly studied over the last 30 years. As nations become economically developed, they are able to afford more environmental quality, which is considered to be a normal good (Duroy 2005). The ability to purchase environmental quality with increasing affluence is the logic behind the environmental Kuznets curve (EKC). The EKC hypothesis suggests an inverse U-shaped relationship between economic well-being and environmental degradation (Duroy 2005). Post-industrialized western countries have become concerned with nonmaterial values, such as environmental attitudes and behaviour, and not solely with material gain (Inglehart 1997).

In North America, studies on environmental attitudes and concerns date back to about the 1970s (Bord and O'Connor 1997). In the 1970s, environmentalism valued environmental conservation largely for aesthetic and recreational purposes (Hays 1987). However, by the 1980s, health and well-being had become linked to environmental concerns; the threats to plants and animals began to be linked with threats to human health and well-being, and even to global survival (Bord and O'Connor 1997).

Today the ideas regarding environmental responsibility and environmental stewardship are commonplace. The environmental activism of the 1970s has been incorporated into Western society through the creation of institutions and professions whose purposes are environmental preservation and conservation. Because of this, developed Western nations often have widespread and normative ecological awareness (Raudsepp 2001).

Statement of Problem

Many studies have attempted to predict environmental awareness and attitudes based on people's socio-demographic characteristics. Some authors argue that theoretical arguments are lacking for why socio-demographic variables influence environmentalism; however, the relationships between socio-demographic variables and environmental concern have been empirically shown many times (Raudsepp 2001). Age, education, and gender have shown strong and consistent relations with environmentalism while income has shown weak and inconsistent relations (Raudsepp 2001).

Females have been consistently shown to have higher environmentally conscious attitudes than men. The common reason given for gender differences in regards to environmental attitudes is the different socialization patterns between boys and girls, and women's resulting increased risk perception (Diamontopoulos *et al.* 2003; Raudsepp 2001).

Education generally has a positive and significant association with environmental attitudes. Explanations for the positive relation include the reasoning that higher education allows an increased understanding of the complexities surrounding ecological issues (Diamontopoulos *et al.* 2003). However, while Raudsepp (2001) found the explanatory power of education on environmental attitudes to be positive and significant, Diamontopoulos *et al.* (2003) did not find a significant relation, the lack of a significant relation highlights the inconsistency of demographic variables' explanatory power.

The arguments for the possible link between income and environmental attitudes include the fact that with increasing income, people are able to witness environmental degradation through their outdoor leisure pursuits (Diamontopoulos *et al.* 2003). Perhaps though, it is something more fundamental and can be explained by lower income classes'

uncertainty of their own future, which reduces their concern for the environmental quality that others in the future will enjoy. Nonetheless, income has resulted in inconsistent correlations with environmental attitudes, and Raudsepp (2001) has found income to be negative and insignificant in its explanatory power for environmental attitudes.

Age is fairly consistent in producing negative relations with environmental attitudes. The negative association is often explained by the fact that solutions to environmental problems are seen as threats to the existing social order in which older people have more fully invested themselves (Diamontopoulos *et al.* 2003). However, conflicting results have been found (Raudsepp 2001 and Diamontopoulos *et al.* 2003).

Raudsepp (2001) found that socio-demographic characteristics are minor factors in the explanation of environmental attitudes. Diamontopoulos *et al.* (2003) also found that although regressions run using demographic variables to explain environmental attitudes were significant and the signs of the beta coefficients were as expected, socio-demographic characteristics explain only a small proportion of the variance (in every case, less than 6%), and that despite large sample sizes the coefficients were rarely significant. Therefore, although correlations and multivariate results indicate socio-demographics are associated with environmental consciousness, their explanatory power is weak (Diamontopoulos *et al.* 2003).

The ideas of environmental consciousness and environmental stewardship have become integrated into Western culture; however, the practice of the ideas is not always realized. While many studies have looked at environmental attitudes and awareness, fewer studies have related environmental behaviour to attitudes. Some studies have assumed that attitudes predispose individuals to certain actions; however, care must be taken with

assumptions. People can state a certain attitude in a survey due to cultural or societal beliefs and pressures, but then not act in accordance with those stated beliefs and values. Studies of environmental attitudes have found that more and more people declare their concern about the global ecological situation and their willingness to contribute in some way to protect the global environment; however, in reality these same concerns are inconsistently carried out (Raudsepp 2001). Environmental concerns can result in certain beliefs and attitudes that lead to activities such as self-restricted consumption, participation in ecological movements and willingness to sacrifice for environmental protection (Raudsepp 2001). However, the relationships between attitudes and behaviour remain controversial (Raudsepp 2001).

Despite the link between environmental attitudes and behaviour being called controversial, some studies have found positive associations between the two. For example, Grunert and Juhl (1995) found that Danish teachers that were more environmentally concerned were more likely to purchase organic foods. The link between environmentally conscious consumers, socio-demographic variables, and environmental attitudes can have important ramifications for the marketing strategies of companies (Mainieri 1997).

Objectives

The questions of what demographic variables characterize people who are concerned about the environment and whether people follow through to act on their concerns were addressed. This study dealt with whether or not Edmonton city residents' environmental attitudes are significantly influenced by age, income, education, gender, and place surveyed. The question of whether those people who are more concerned about their individual health are also more concerned about the overall health of the planet, as suggested by Bord and O'Connor (1997),

was investigated. Finally, the question of whether environmental attitudes translate into environmental action was considered through an analysis of whether environmental attitudes could predict membership in environmental groups and/or high frequency organic food shoppers.

Consideration of previous studies and empirical evidence led to the hypothesis that income and education positively influence environment attitudes. It was also hypothesized that women and younger people will exhibit higher environmental attitude scores. The people questioned at organic stores and farmers' markets were expected to be more environmentally conscious on average than people surveyed at other locations in Edmonton. Environmental attitudes and health attitudes were expected to have a significant positive correlation. Finally, it was hypothesized that environmental attitudes will be correlated with environmental behaviour but will be unable to fully predict behaviour.

Methods

The data used to answer the research questions posed were collected by Annett (2006). The data were collected during the months of October and November, 2005 in Edmonton, AB and surrounding communities (Sherwood Park, St. Albert, and Red Deer). The survey was administered at organic grocery stores, shopping centres, a local farmers' market, the University of Alberta, and other public venues that ensured a sample of consumers with varying ages, incomes, and education levels (Annett 2006). A total of 389 people participated in the survey.

Respondents' health and environmental attitudes were measured with two attitude scales. Annett (2006) adapted the health attitudes scale from Houts and Warland's Health

Locus of control scale (1989). Respondents were asked five questions regarding the level of concern they had for their health. Possible responses ranged from Not very much (= 1) to Very much (= 5). For the environmental attitudes scale, Annett (2006) adapted the Environmental concern attitudes scale developed by Clarke *et al.* (2002). The original 15-question scale was modified to 7 questions. The answers ranged from strongly disagree (= 1) to strongly agree (= 5). The scale reliability of both the health and environmental scale questions was confirmed before administering the questionnaire (Annett 2006). Cronbach's α was used to validate the scales after completion of the survey administration.

This study makes use of the data collected concerning age, household income, education, gender, membership in environmental groups, location of survey administration, organic food purchase habits, reasons that might prevent purchase of organic foods, health attitudes, and environmental attitudes.

Models

The ability of socio-demographic variables to explain environmental attitudes was assessed through the use of ordinary least squares regression, and the ability of environmental attitudes to predict environmentally conscious behaviours was analyzed using logit models.

The models made use of the following variables:

- EnvScore_i = the environmental attitude score for respondent i
- MemEnv_i = whether or not respondent i is a member of an environmental group (1 = a member)
- PurOrg_i = frequency of organic food purchases by the i^{th} respondent (1 = frequently or always, 0 = sometimes, rarely or never)

- $Education_i$ = the education level of the i^{th} respondent (1 = at least some post-secondary education, 0 = only high school or less)
- $Male_i$ = the gender of the i^{th} respondent (1 = male)
- Age_i = the age of the i^{th} respondent (average of age class)
- $Income_i$ = the household income of the i^{th} respondent (average of income class)
- $Location_i$ = the location of survey administration (1 = organic stores or farmers' market, 0 for all other locations) for the i^{th} respondent
- $HealthScore_i$ = the health attitude score of the i^{th} respondent

$$EnvScore_i = \beta_0 + \beta_1 Education_i + \beta_2 Male_i + \beta_3 Age_i + \beta_4 Income_i + \beta_5 Location_i + \mu_i$$

(equation 1) was used to model environmental attitude scores of respondents based on demographic variables supported by theory and previous studies. The inclusion of both education and income occurs in this model because the correlation between the two is relatively low ($r = 0.159$, p -value = 0.002). The relationship between health attitudes and environmental attitudes was analysed through a bivariate correlation.

To determine if environmental attitudes and behaviours are linked, correlations were run between frequency of organic purchases (1 = rarely or never, 2 = sometimes, 3 = frequently or always) and environmental attitudes, and between environmental attitudes and membership in environmental groups. The ability of environmental attitudes to predict environmental behaviour was analyzed using three binomial logit models. Two models were used to predict membership in environmental groups: $P(MemEnv_i = 1 | EnvScore_i) = \exp(z) / [1 + \exp(z)]$, where $z = \frac{e^{\beta_0 + \beta_1 EnvScore_i}}{1 + e^{\beta_0 + \beta_1 EnvScore_i}}$, (equation 2); and $P(MemEnv_i = 1 | EnvScore_i, Location_i, Age_i,$

$Education_i, Income_i, Male_i) = \exp(z) / [1 + \exp(z)]$, where

$$z = \frac{e^{\beta_0 + \beta_1 \text{EnvScore}_i + \beta_2 \text{Location}_i + \beta_3 \text{Age}_i + \beta_4 \text{Education}_i + \beta_5 \text{Income}_i + \beta_6 \text{Male}_i}}{1 + e^{\beta_0 + \beta_1 \text{EnvScore}_i + \beta_2 \text{Location}_i + \beta_3 \text{Age}_i + \beta_4 \text{Education}_i + \beta_5 \text{Income}_i + \beta_6 \text{Male}_i}}, \text{ (equation 3).}$$

The third model predicts organic food purchases using environmental attitudes because buying organic foods is generally noted by consumers to be environmentally friendly (Mainieri et al. 1997). The following binomial logit model was used to determine whether buying organic food could be explained by environmental attitudes, while controlling for income and health attitudes:

$P(\text{PurOrg}_i = 1 | \text{EnvScore}_i, \text{Income}_i, \text{HealthScore}_i) = \exp(z) / [1 + \exp(z)]$, where

$$z = \frac{e^{\beta_0 + \beta_1 \text{EnvScore}_i + \beta_2 \text{Income}_i + \beta_3 \text{HealthScore}_i}}{1 + e^{\beta_0 + \beta_1 \text{EnvScore}_i + \beta_2 \text{Income}_i + \beta_3 \text{HealthScore}_i}}, \text{ (equation 4).}$$

Health attitudes were controlled for because it is likely that some people buy organic foods for health rather than environmental reasons. Income was also included in the regression because 77% of respondents stated that the cost of organic foods prevented them from purchasing the foods.

Results and Discussion

Table 1 contains summary statistics of the variables relevant to the study. Survey administration locations were grouped into two categories: farmers' market and organic stores, and the remaining areas including the University of Alberta campus, shopping malls and other public areas. 38% of the surveys were administered at the farmers' market or the organic stores with the remaining 62% surveyed at other locations around Edmonton and surrounding communities. 87% of respondents had at least some post-secondary education, with 60% having completed a degree or diploma. 36% of the respondents were male. The ages of the respondents were placed into classes. Ages ranged from 18 to over 75. The averages of the classes were used as the respondents' age in further regression calculations. Income was measured in classes that had an overall range from less than \$36 600 to more

than \$115 001, and, just like the ages, the averages of the classes were used in the following calculations. Non-responses to questions were removed from the data set. 50% of respondents rarely or never purchased organic foods, 31% sometimes purchased organic foods, and 19% frequently or only buy organic foods. The validity of the environmental and health attitude scales was tested using Cronbach's α before the questions were averaged over each participant and finally the entire sample (table 2 and 3). The environmental attitudes scale displayed good internal validity among respondents ($\alpha = 0.862$), while the health attitudes scale displayed marginal validity ($\alpha = 0.660$) (Nunnally and Bernstein 1994).

Table 1. Demographic and Organic Purchase Characteristics as a Percentage of Total Valid Responses (table adapted from Annett 2006)

	Percentage
Location Surveyed (389 valid responses)	
Organic Stores and Farmers' Market	38
Other Edmonton and Surrounding Community Locations	62
Gender (389 valid responses)	
Male	36
Female	64
Age (389 valid responses)	
18-24	28
25-34	28
35-44	12
45-54	13
55-64	12
65-74	5
75+	3
Education (389 valid responses)	
Some high school	5
High school graduate	8
Some university or college	27
College diploma/degree	17
University undergraduate degree	22
Some post graduate university study	10
Post graduate university degree	11
Income (373 valid responses)	
Less than \$36,600	37
\$36,601- \$71,000	30
\$71,001 - \$115,000	24
More than \$115,001	8
Member of Environmental Group (389 valid responses)	
Yes	11
No	89
Frequency of Organic Purchase (389 valid responses)	
Rarely or never	50
Sometimes	31
Frequently or only	19
Reasons that Prevent Organic Purchases (389 valid responses)	
Costly	77
Unavailable	23
Limited knowledge	22
Untrustworthy	16
Poor quality	13

Note: Due to rounding, percentages may not add to 100%

Table 2. Response to Individual Questions in the Health and Environmental Attitudes Scales

Health Questions	<i>n</i>	Mean	Std. Deviation
1. How much of an effect do you feel what you eat will have on your future health?	386	4.503	0.673
2. To what extent do you feel your health depends on how you take care of yourself?	387	4.649	0.572
3. Some people feel that if they are going to be sick, they will be. How much do you feel it is possible to prevent sickness?	381	3.945	0.849
4. If qualified health professionals recommend eating certain foods, how likely are you to try them?	386	3.764	0.867
5. How much more are you concerned about what you eat then you used to be?	386	3.953	0.922
Environmental Questions			
1. It makes me sad to see natural environments destroyed.	385	4.543	0.653
2. Unique environments should be protected at all costs.	385	4.148	0.914
3. One of the most important reasons to conserve is to preserve wild areas.	381	4.144	0.841
4. Wild plants and animals have a right to live unmolested by humans.	387	4.119	0.974
5. We must prevent any type of animal from becoming extinct, even if it means sacrificing some things for ourselves.	384	3.992	1.031
6. I am willing to make personal sacrifices for the sake of slowing down pollution even though the immediate results may not seem significant.	386	4.298	0.754
7. Natural ecosystems have a right to exist for their own sake, regardless of human concerns and uses.	387	4.096	0.9324

Table 3. Environmental and Health Attitude Summary Statistics (minimum possible = 1; maximum possible = 5; mean value used as respondents' attitude score)

	Cronbach-α	Minimum	Mean	Maximum	Std. Deviation
Environmental Attitudes					
<i>n</i> = 384	0.862	1.71	4.19	5.00	0.6448
Health Attitudes					
<i>n</i> = 385	0.662	2.40	4.15	5.00	0.5206

Equation 1 tests the ability of demographic variables to explain differences in environmental attitudes. The model explains 10.3% of the variation in environmental attitudes among respondents and is significant at the 1% level of significance (F-stat = 8.34, $p < 0.0001$). The goodness of fit may seem low, but combining all demographic factors has been found to rarely result in an explanation of greater than 15% of the variation in environmental attitudes (Klineberg *et al.* 1998). Individual coefficient values and significances are listed in table 3.

Given the data observed, at the 1% level of significance, men on average have environmental attitudes 0.231 lower than women holding all else constant. The higher environmental attitude responses for women are in accordance with the bulk of the literature. However, contrary to the findings of most previous studies, the model predicts a positive association between age and environmental attitudes. However, the coefficient is quite small (0.006), and, therefore, its practical significance is questionable. Some studies have begun to find that age may be less consistently correlated with environmental attitudes due to the widening of the socio-demographic base that has become environmentally conscious (Mainieri *et al.* 1997). The lack of consistency in findings regarding environmental attitudes has also been attributed to the questions used to measure respondents' environmental awareness and attitudes (Klineberg *et al.* 1998).

The regression presents a quantitative measure of whether environmental attitudes differ between consumers based on the location they were surveyed. Given the data observed in the study, environmental attitudes of shoppers are significantly different when grouped by location of survey administration ($p < 0.001$). Holding all else constant, people interviewed at the organic stores and farmers' markets have on average a 0.287 higher environmental

attitude response than respondents interviewed at other locations around Edmonton. The hypothesis that shoppers at organic stores and farmers' markets are more environmentally conscious is supported, which also lends support to the hypothesis that environmental attitudes can influence consumer behaviour.

Table 4. OLS Regression Analysis Used to Predict Respondents' Environmental Attitude Scores

Variable Name	Coefficient	Standard Error	<i>p</i> -value
Post-secondary Education	0.015	0.099	0.882
Male	-0.231	0.068	0.001**
Age	0.006	0.002	0.006**
Household Income	-1.41E-06	9.6E-07	0.142
Organic Store and Farmers' Market	0.287	0.137	0.000**
<i>n</i> = 369			
$R^2 = 0.103$			

** significant at the 1% level of significance

The correlation between health and environmental attitudes is positive and significant as predicted ($r = 0.247$, $p < 0.0001$). This result may suggest an anthropocentric view of nature; people's awareness of the health risks associated with environmental degradation may result in their concern about environmental conservation. The results may also be suggestive of a certain lifestyle; some people may be more conscious about their own health as well as their planet's health.

The correlation between environmental attitudes and high frequency organic food shoppers is positive and significant ($r = 0.1605$, $p = 0.0016$). Environmental attitudes and membership in environmental groups also resulted in a significant positive correlation ($r = 0.132$, $p = 0.0096$). This lends support to the idea that environmental attitudes and behaviour are related. The results of the regressions attempting to describe environmental behaviour as a function of environmental attitudes (*equations 2, 3 and 4*) are listed in tables 5 and 6. The

logit models designed to predict membership to environmental groups (*equation 2* Log likelihood = -132.991, $p = 0.006$, Pseudo $R^2 = 0.027$; *equation 3* Log likelihood = -116.106, $p = 0.0003$, Pseudo $R^2 = 0.098$) and frequency of organic purchases (Log likelihood = -168.969, $p = 0.001$, Pseudo $R^2 = 0.049$) are statistically significant at the 1% level of significance. For the logit models, marginal effects were utilized to evaluate the effects of a one unit, or discrete movement from 0 to 1, on the dependent variables (Wooldridge 2003). Equations 2 and 4 predict that a one unit increase in average environmental attitudes (moving from an average of somewhat agree to strongly agree, for example) increases the probability of being in an environmental group by 7.6% and of frequently or always buying organic foods by 8.9%. Also, at the margin, an increase in the health scale by one unit increases the likelihood that a person frequently buys organic foods by 8.3% ($p = 0.048$). These results suggest that organic markets may benefit from targeting both environmentally conscious and health conscious consumers by promoting the beneficial environmental and health qualities of organic foods. Equation 3 highlights the inability of socio-demographic variables to predict environmentally conscious behaviours; the only significant variable is location. Respondents surveyed at farmer's markets and organic grocery stores are on average 10.7% more likely to be a member of an environmental group than respondents interviewed elsewhere. In equation 3 environmental attitudes are no longer a significant explanatory variable for membership in environmental groups because of its relationship with location.

The models exhibit limited explanatory power. The equations' fits are both low which suggests that although environmental attitudes influence environmental behaviour, other factors also play a large role in determining environmentally conscious behaviour. Research has also indicated that pro-environmental attitudes can be shown through a multitude of

environmental behaviours and that those behaviours are not always highly correlated amongst each other (Mainieri *et al.* 1997). Therefore, respondents' higher environmental attitudes may result in other environmental behaviours such as carpooling or recycling which may not be correlated to this study's predicted variables. As a result, environmental behaviour may be more tightly linked to attitudes than can be measured in this study.

Table 5. Logit Analysis Results for Prediction of Membership in Environmental Groups

Membership in Environmental Group				
Variable Name	Coefficient (std error)	<i>p</i> -value	Marginal Effects (std error)	<i>p</i> -value
<i>equation 2</i>				
Environmental Attitudes	0.760 (0.298)	0.011*	0.072 (0.026)	0.006**
<i>n</i> = 384				
$R^2 = 0.027$				
<i>equation 3</i>				
Environmental Attitudes	0.591 (0.334)	0.077	0.046 (0.025)	0.068
Income	5.94e-06 (5.41e-06)	0.272	4.67e-07 (0.000)	0.269
Education [†]	0.010 (0.557)	0.858	0.008 (0.041)	0.854
Male [†]	0.085 (0.373)	0.821	0.007 (0.030)	0.823
Age	0.015 (0.012)	0.198	0.001 (0.001)	0.196
Location [†]	1.182 (0.368)	0.001**	0.107 (0.036)	0.003**
<i>n</i> = 369				
$R^2 = 0.098$				

[†] Marginal effects is for a discrete change of variable from 0 to 1

* significant at 5% level of significance

** significant at the 1% level of significance

Table 6. Logit Analysis Results for Predicting Frequency of Organic Purchases
Frequently or Only Organic Purchases
 ($n = 368$)

Variable Name	Coefficient		Marginal Effects	
	(std error)	<i>p</i> -value	(std error)	<i>p</i> -value
Environmental Attitudes	0.628 (0.252)	0.013*	0.089 (0.035)	0.010**
Health Attitudes	0.585 (0.301)	0.052	0.0832 (0.042)	0.048*
Household Income	5.95E-06 (4.00E-06)	0.137	8.46E-07 (0.000)	0.134
$n = 368$				
$R^2 = 0.049$				

* significant at 5% level of significance

** significant at the 1% level of significance

Conclusions

Gender as a predictor of environmental attitudes resulted in the expected outcome of women scoring higher than men. However, the regression results for the age, income and school variables were not consistent with the bulk of the literature, but the associations between environmental attitudes and socio-demographic variables have been inconsistent throughout the literature. Reasoning behind the inconsistency includes the statement by Mainieri *et al.* (1997) that environmental attitude trends associated with education and socioeconomic groups have weakened as the result of the widened social diversity of the “environmental public.” It is believed that environmental attitudes may not be as clearly linked to demographic variables as they once were (Mainieri *et al.* 1997). Klineberg *et al.* (1998) believe that the questions used to measure environmental attitudes are behind the inconsistency of socio-demographic variables’ ability to explain environmental attitudes. Some studies have even stated that socio-cultural and socio-psychological variables are better

explanatory methods for environmental attitudes and should be used instead of socio-demographic characteristics (Raudsepp 2001).

Environmental attitude is a significant explanatory variable in the prediction of frequent organic food shoppers and membership in environmental groups. There are also significant positive correlations between the environmental behaviours and attitudes. However, the logit models explained only a small amount of the variation in the dependent variables. Alternate factors that can potentially influence environmental behaviours include accessibility to environmental groups and organic food stores. The inability of environmental attitudes to predict environmental behaviour is not surprising given previous studies.

Health attitudes and environmental attitudes are correlated which suggests that people who are more concerned about their own health are also more concerned about the health of the planet. Further study could be done to determine if the correlation is more biocentric or anthropocentric in nature.

The dependent variable was not normally distributed (mode = 5, median = 4.19) and the variance in the environmental attitudes was fairly small ($s = 0.6448$). Using an explanatory variable with little variation limits the results of regression used to address the question of whether environmental attitudes can predict environmental behaviour. The high average value for environmental attitudes is likely due to the acceptance of environmental values as norms in our society and the hypothetical nature of the survey. A lack of knowledge about environmental issues and the possible lack of consideration for the total ramifications implied by the questions may result in overstated environmental attitudes.

Overall, while there are correlations between environmental attitudes and socio-demographic variables, the explanatory power of socio-demographic variables is weak.

Environmental attitudes are unable to accurately predict environmental group membership or organic food shoppers, but correlations between environmental attitudes and behaviours indicate there are connections between the two.

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