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Summer 9-4-2014

# ATTRIBUTES OF CONSUMERS MOST LIKELY TO USE GOODGUIDE.COM SUSTAINABILITY INFORMATION ABOUT “GREEN” HOUSEHOLD PRODUCTS

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### Recommended Citation

Angeles, Rebecca, "ATTRIBUTES OF CONSUMERS MOST LIKELY TO USE GOODGUIDE.COM SUSTAINABILITY INFORMATION ABOUT “GREEN” HOUSEHOLD PRODUCTS" in Mola, L., Carugati, A., Kokkinaki, A., Pouloudi, N., (eds) (2014) *Proceedings of the 8th Mediterranean Conference on Information Systems*, Verona, Italy, September 03-05. CD-ROM. ISBN: 978-88-6787-273-2.

<http://aisel.aisnet.org/mcis2014/50>

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# ATTRIBUTES OF CONSUMERS MOST LIKELY TO USE GOODGUIDE.COM SUSTAINABILITY INFORMATION ABOUT “GREEN” HOUSEHOLD PRODUCTS

*Completed Research*

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## **Abstract**

*This study investigates the attributes of consumers most likely to be influenced in a number of ways by the information provided by an online environmental infomediary (OEI) GoodGuide.com to advise consumers on the overall and specific sustainability attributes of personal care and household chemical and food products. Consumer attributes are characterized using the value-belief-norm theory and the New Environmental Paradigm (NEP) scale. An experimental treatment was applied to a sample of both undergraduate and graduate students at the Faculty of Business Administration, University of New Brunswick Fredericton, Canada, after which a survey was administered to the respondents. Data analysis using a series of logistic regressions was used in this study. Study results indicate the usefulness of both theoretical frameworks in understanding consumer predisposition to use OEI provided information and the potential of social networking and use of mobile devices and apps in facilitating access and use of green information.*

**Keywords:** *Environmental sustainability, value-belief-norm theory, New Environmental Paradigm (NEP), online environmental infomediary (OEI)*

## **1 Introduction**

A major global concern is respecting the limits of the earth's natural resources in the marketplace where business operations control the production of physical goods and services. Educating consumers to understand and use sustainability information to inform their purchases is one area where information technology can play a role in the form of online sustainability information infomediaries. This study investigates one such infomediary, GoodGuide.com, an online environmental intermediary (OEI) that provides sustainability performance ratings for thousands of consumer household products in a form that is useful at the point of purchase. The use of such information websites, however, needs to be understood from the point-of-view of consumers and what motivates them in anticipating the possibility that they might use the information posted in sustainability-related infomediaries in their purchase experience. Thus, this study is grounded on the theoretical concepts of the value-belief-norm (VBN) theory and the New Environmental Paradigm (NEP) scale to have a deeper look at the values, beliefs, norms, and attitudes that come into play and are possibly associated with the willingness to be influenced in a number of ways by the information posted in such "green" infomediaries. An OEI like GoodGuide.com is also a good example of implementing the idea of "transparency" in the product's supply chain by revealing salient sustainability related information that informs the consumer about things like raw materials used in the production of the product and the sustainability of the business operations involved in the manufacturing process itself (Goleman, 2009). OEIs like GoodGuide.com should also take advantage of social networking and mobile apps that can assist consumers make an "intelligent" green decision at the point of purchase.

### **1.1 Objectives of the Study**

This study investigates the attributes that would clearly identify study respondents who are more likely to be influenced by the information provided by an OEI called GoodGuide.com in a consumer's purchase of personal care and household chemical and food products using the concepts of the value-belief-norm (VBN) theory and the New Environmental Paradigm (NEP) scale. This study uses a series of logistical regressions to meet this study objective. While there is great concern for the ability of firms to conduct environmentally sustainable business operations in the manufacture of physical products, there is the equally important matter of providing consumers accurate, reliable, timely, and trustworthy information they can use in buying sustainable products at the point of purchase. Both the VBN theory and NEP scale have been used previously in a wide variety of studies involving environmental sustainability. However, this is the first study to use these frameworks in determining a consumer's willingness to influence others and be influenced by the information on the sustainability of products provided by GoodGuide.com.

### **1.2 GoodGuide.com Environmental Sustainability Information for Consumers**

Founded by Dara O'Rourke, a professor of environmental and labor policy at the University of California at Berkeley, GoodGuide.com provides consumers information about the environmental, health, and social performance of about 100,000 or more products covering primarily personal care, household chemical and food products, and to a lesser extent, pet food, paper products, lighting products, home appliances, cell phones, and cars. GoodGuide.com focuses on products that account for 80 percent of sales revenues within its product category. There is also a GoodGuide.com mobile app that is free and downloadable for consumer use at the point of purchase in groceries and/or supermarkets. Product performance information across the three dimensions is expressed in ratings in

a scale from 0 to 10 --- the higher the number, the more environmentally friendly the product is. GoodGuide.com provides both an overall product rating and also drills down to the individual numerical ratings for each of the three areas of scoring.

The following is a detailed description of each of the three performance dimensions. The health rating encompasses the following aspects: (1) human health impact: provides information about the health hazards the ingredients used pose and the product's nutritional value; (2) data adequacy: informs consumer if the information needed to evaluate health risks was available for the product; (3) other negative aspect indicators: cover issues such as whether or not the firm used banned or restricted ingredients in making the product, toxic materials, or contaminants from the production process; and (4) product management indicators: cover issues related to the sustainable management of the products based on third-party certifications verifying health or environmental performance.

The environmental rating encompasses the following aspects: (1) environmental management indicators: covers issues such as the firm's overall corporate governance encompassing sustainability in its supply chain, the firm's compliance with sustainability related legislation, involvement in controversies, use of exemplary sustainability business practices, etc.; (2) transparency indicators: covers availability of relevant information from the product's firm to evaluate things like the raw materials use for manufacturing the product, water and energy use in the production process, etc.; and (3) environmental impact indicators: cover issues relevant to the consequences of the product firm's manufacturing processes like carbon emissions, waste generation, greenhouse gas emissions, thwarting of biodiversity, etc.

The social rating encompasses the following aspects: (1) environmental management indicators: cover issues such as the firm's overall corporate governance encompassing sustainability in its supply chain, the firm's compliance with sustainability related legislation, involvement in controversies, use of exemplary sustainability business practices, etc.; (2) transparency indicators: cover availability of relevant information from the product's firm to evaluate social issues; (3) consumer indicators: cover issues pertaining to customer health and safety, product recall, labeling, and marketing practices; (4) community indicators: cover issues related to a product firm's relationships with the community, stakeholder engagement initiatives, and public policy positions; (5) worker indicators: cover issues related to the product firm's performance on occupational safety, worker health, diversity and equal opportunity in hiring, observance of human and labor rights, etc. The knowhow behind GoodGuide.com's ratings is represented by a team of scientific and technology experts in life cycle assessment, environmental engineering, chemistry, nutrition, and sociology, who analyze and organize product information data from various sources.

GoodGuide.com information for consumers is provided for free. GoodGuide.com's business has been funded by venture capital funds from New Enterprise Associates, Draper Fisher Jurvetson and Physic Ventures. Recently, however, Underwriters Laboratories, one of the biggest quality assurance firms, purchased GoodGuide.com, however the website continues to function as an independent subsidiary (Godfrey, 2014). GoodGuide.com also earns revenue from firms that purchase business intelligence related to the evaluation of the environmental sustainability of their products/services. This business intelligence service helps client firms compare their sustainability performance expressed as the three assessment components (i.e., health, environmental, and social) vis-à-vis those of their competitors.

## **2 Literature Review**

### **2.1 Value-Belief-Norm Theory**

This study uses Stern's value-belief-norm (VBN) theory, which is, thus far, the most comprehensive and empirically supported theory that connects the concepts of value theory, norm activation theory, and the New Environmental Paradigm perspective in anticipating pro-environmental behavior. In a nutshell, the VBN theory purports that the convergence of a person's values, beliefs, and personal norms drives his or her environmental behavior. Stern's theoretical framework is an all-inclusive umbrella that describes how the relatively stable elements of a person's personal and belief structure link with that person's more focused beliefs about the relationships between humans and nature (i.e., NEP), that person's awareness of the consequences of his/her actions pertaining to the environment, and finally, that person's sense of responsibility for taking corrective action. This model has had strong empirical support. It has been shown, for instance, that the model predicts environmental citizenship, private-sphere behavior, and policy support (Stern et al., 1999).

The values associated with environmental behavior are the altruistic, biospheric, and egoistic values (de Groot and Steg, 2008; Hansla et al., 2008; Stern et al., 1999). The influence of these values on an individual's green consumer decision varies. The altruistic value focuses on the perceived costs and benefits for other people. The biospheric value focuses on the perceived costs and benefits for the ecosystem and biosphere as a whole. The egoistic value focuses on whether the perceived benefits exceed the perceived costs solely for the individual concerned. Altruistic and biospheric values have been found to relate positively with green consumer behaviors, while egoistic values appear to relate negatively with the same (Cleveland et al., 2005; Nordlund and Garvill, 2002). Also, within the moral norm-activation framework (Schwartz, 1977) of the VBN theory, it has been found that a pro-environmental norm develops, which, in turn, could very likely lead to green behavior if the person is aware of the consequences of the behavior (AC) and if he/she ascribes responsibility to himself/herself for taking preventive action (Bamberg and Schmidt, 2003; Stern, 2000).

The last concept in the framework is personal norm (i.e., personal environmental norm), which translates into feelings of moral obligation to act, making the individual more willing to behave in a green manner. To develop this particular norm, an individual needs to incorporate his/her social norms into a consistent personal value system.

## **2.2 New Environmental Paradigm (NEP) Scale**

Dunlap and Van Liere (1978, 1984) introduced their conceptualization of the New Environmental Paradigm (NEP) which presents beliefs about humanity's ability to upset the balance of nature, existence of the limits to growth for human societies, and humanity's right to rule over nature and its resources. The early version of this scale proved to be robust: Dunlap and Van Liere found that the instrument's 12 items had a high internal consistency (coefficient alpha = .81) in the 1976 Washington State study which strongly distinguished known environmentalists from the general public. Thus, the authors argued that the instrument could be used as the New Environmental Paradigm Scale for measuring environmental concern. In time, consensus among various social scientists emerged, in effect, supporting the NEP scale as representing a coherent set of beliefs constituting a worldview toward specific environmental issues (Dalton et al., 1999).

This study uses selected items from the NEP scale and a high score on this scale implies a proecological orientation that is expected to lead to proenvironmental beliefs and attitudes on a wide range of issues (Pierce, Dalton, & Zaitsev, 1999; Stern, Dietz, & Guagnano, 1995).

## **2.3 Propositions to be tested**

The following propositions are suggested in the light of the VBN theory that will primarily be tested in this study by using logistical regression. These propositions embody the following predictor variables: biospheric values, altruistic values, and egoistic values; awareness of consequences and ascription of

responsibility; personal environmental norm; and the NEP scale items. The key dependent variable is the willingness of the study respondent to be influenced by GoodGuide.com information in a number of ways. Specifically, the six dependent variables that are explored in the study are the following: (1) Variable 17: information available on GoodGuide.com would be useful to the respondent in purchasing green products; (2) Variable 18: respondent thinks that consumers should consult GoodGuide.com information to properly identify green products; (3) Variable 19: respondent would be willing to share GoodGuide.com information with family and friends; (4) Variable 21: respondent would be willing to share GoodGuide.com information with family and friends via a social network; (5) Variable 22: respondent would be willing to be influenced by GoodGuide.com information from family and friends; and (6) Variable 29: respondent would use the GoodGuide.com smartphone app when shopping for household products.

- 1) Individuals high in biospheric value scores are more likely to be influenced by GoodGuide.com information in a number of ways.
- 2) Individuals high in altruistic value scores are more likely to be influenced by GoodGuide.com information in a number of ways.
- 3) Individuals low in egoistic value scores are more likely to be influenced by GoodGuide.com information in a number of ways.
- 4) Individuals high in awareness of consequences scores are more likely to be influenced by GoodGuide.com information in a number of ways.
- 5) Individuals high in ascription of responsibility scores are more likely to be influenced by GoodGuide.com information in a number of ways.
- 6) Individuals high in personal environmental norm scores are more likely to be influenced by GoodGuide.com information in a number of ways.
- 7) Individuals high in NEP mean scores are more likely to be influenced by GoodGuide.com information in a number of ways.

### **3 Research Method**

The research method used in this study is the experimental method combined with the survey technique. Both undergraduate and graduate students of the course, “Management Information Systems” in the Faculty of Business of the University of New Brunswick Fredericton were invited to participate in the study. There were no incentives offered and a total of 128 students chose to participate in the study. The experimental treatment consisted of exposing the students to the following elements before the written survey was administered: a lecture on the concept of “environmental sustainability” as applied to corporate supply chains; a tour of the GoodGuide.com website showing its background, services, functionalities, and explanation of the ratings used for products shown on the site; and a demonstration of the GoodGuide.com mobile app used in smartphones so that consumers could access GoodGuide.com product ratings in the grocery/supermarket.

The following items constitute the specific measures of the key dependent variable in the study, mean of the willingness to be influenced by GoodGuide.com information and willingness to influence others as well: “I think that the information available on GoodGuide.com will be useful to me in the future for purchasing green products.”; “People purchasing household products should consult information on GoodGuide.com to properly identify green products.”; “I would be willing to share information about green household products that I learn from GoodGuide.com with my family members and friends.”; “I would be willing to share information I learn about green household products from GoodGuide.com with family members and friends via my social network account.”; “If my family

members and friends shared information about green products from GoodGuide.com, I would be willing to be influenced by this information in my purchase decisions.”; “I find the product and firm information on GoodGuide.com reliable and trustworthy.”; “I find the experts used by GoodGuide.com to produce the firm and product ratings to be reliable and trustworthy.”; “I think that third party websites like GoodGuide.com are doing the consumer public a good service by providing reliable and good information on the ratings of products in terms of how ‘green’ they are using scores reflecting ‘environment,’ ‘health,’ and ‘society’ ratings.”; “I think that social networking via Facebook, LinkedIn, Twitter, MySpace, etc., has the potential of helping consumers spread the good word about ‘green’ products.”; and “I would very likely use GoodGuide.com’s app for a smartphone while shopping for products in a grocery or supermarket.”

The independent variables consist of the constructs used in the VBN theory and NEP scale. The following constructs are part of the VBN theory framework: biospheric values (4 items), altruistic values (4 items), and egoistic values (4 items); awareness of consequences (9 items); ascription of responsibility (4 items); and personal environmental norm (5 items). A total of 7 items were selected for the NEP scale used in this study. A number of logistical regressions was conducted as the data analysis method for this study.

## 4 Study Findings

Logistic regression was conducted to assess whether the seven predictor variables, biospheric, altruistic, and egoistic values; awareness of consequences and ascription of responsibility; personal environmental norm; and the NEP scale mean, would significantly predict a number of dependent variables related to the respondent’s willingness to be influenced by GoodGuide.com information. The assumption of observations being independent and independent variables being linearly related to the logit were checked and met. Table 1 shows the detailed logistic regression results for all the six dependent variables explored. Overall, propositions 1, 5, and 6 were supported by the study findings using logistic regression.

When all seven predictor variables are considered together, they significantly predicted all six dependent variables. In predicting whether or not information available on GoodGuide.com would be useful to the respondent in purchasing green products, the full model was significant, chi square = 48.747,  $df = 7$ ,  $N = 115$ ,  $p < .000$ . Table 1 presents the odds ratios, which suggest that for this dependent variable, the odds that the respondent would use the GoodGuide.com information in purchasing green products are increasingly greater as this person’s personal environmental norm score increases.

In predicting whether or not the respondent would think that other consumers should consult GoodGuide.com information to properly identify green products, the full model was significant, chi square = 31.786,  $df = 7$ ,  $N = 117$ ,  $p < .000$ . Table 1 presents the odds ratios, which suggest that for this dependent variable, the odds that the respondent would think that other consumers should consult GoodGuide.com information to properly identify green products are increasingly greater as this person’s ascription of responsibility score increases.

In predicting whether or not the respondent would be willing to share GoodGuide.com information with family and friends, the full model was significant, chi square = 43.468,  $df = 7$ ,  $N = 117$ ,  $p < .000$ . Table 1 presents the odds ratios, which suggest that for this dependent variable, the odds that the respondent would be willing to share GoodGuide.com information with family and friends are

increasingly greater as this person's ascription of responsibility and personal environmental norm scores increase.

In predicting whether or not the respondent would be willing to share GoodGuide.com information with family and friends via a social network, the full model was significant, chi square = 26.779, df = 7, N = 114, p < .000. Table 1 presents the odds ratios, which suggest that for this dependent variable, the odds that the respondent would be willing to share GoodGuide.com information with family and friends via a social network are increasingly greater as this person's biospheric value score increases.

In predicting whether or not the respondent would be willing to be influenced by GoodGuide.com information from family and friends, the full model was significant, chi square = 29.504, df = 7, N = 116, p < .000. Table 1 presents the odds ratios, which suggest that for this dependent variable, the odds that the respondent would be willing to be influenced by GoodGuide.com information from family and friends are increasingly greater as this person's ascription of responsibility score increases.

In predicting whether or not the respondent would be willing to use the GoodGuide.com smartphone app when shopping for household products, the full model was significant, chi square = 33.715, df = 7, N = 114, p < .000. Table 1 presents the odds ratios, which suggest that for this dependent variable, the odds that the respondent would use the GoodGuide.com smartphone app when shopping for household products are increasingly greater as this respondent's personal environmental norm score increases.

Variable	B	SE	Odds ratio	p
Dependent Variable 17: information available on GoodGuide.com would be useful to the respondent in purchasing green products				
VBN Theory: Biospheric Value	.613	.406	1.847	.131
Altruistic Value	.746	.413	2.109	.071
Egoistic Value	.328	.215	1.388	.127
Aware of Consequences	-.087	.392	.917	.825
Ascription of Responsibility	-.235	.299	.791	.433
<b>Personal Envi Norm</b>	<b>.552</b>	<b>.262</b>	<b>1.737</b>	<b>.035</b>
NEP Scale	-.443	.444	.642	.318
Dependent Variable 18: respondent thinks that consumers should consult GoodGuide.com information to properly identify green products				
Variable	B	SE	Odds ratio	p
VBN Theory: Biospheric Value	.006	.333	1.006	.985
Altruistic Value	.332	.327	1.394	.310
Egoistic Value	.145	.186	1.156	.437
Aware of Consequences	-.169	.329	.844	.606
<b>Ascription of Responsibility</b>	<b>.723</b>	<b>.265</b>	<b>2.060</b>	<b>.006</b>
Personal Envi Norm	.065	.215	1.067	.762
NEP Scale	.183	.407	1.200	.653



Dependent Variable 19: respondent is willing to share GoodGuide.com information with family and friends				
Variable	B	SE	Odds ratio	p
VBN Theory: Biospheric Value	-.129	.393	.879	.743
Altruistic Value	.516	.378	1.675	.173
Egoistic Value	.305	.235	1.357	.194
Aware of Consequences	-.514	.451	.598	.255
<b>Ascription of Responsibility</b>	<b>.830</b>	<b>.321</b>	<b>2.294</b>	<b>.010</b>
<b>Personal Envi Norm</b>	<b>.500</b>	<b>.272</b>	<b>1.649</b>	<b>.067</b>
NEP Scale	-.106	.526	.900	.841
Dependent Variable 21: respondent is willing to share GoodGuide.com info with family & friends via a social network				
Variable	B	SE	Odds ratio	p
<b>VBN Theory: Biospheric Value</b>	<b>.831</b>	<b>.369</b>	<b>2.296</b>	<b>.024</b>
Altruistic Value	-.116	.351	.890	.741
Egoistic Value	.256	.182	1.292	.160
Aware of Consequences	-.102	.313	.903	.745
Ascription of Responsibility	.227	.263	1.255	.387
Personal Envi Norm	.021	.233	1.021	.929
NEP Scale	.341	.390	1.407	.381
Dependent Variable 22: respondent is willing to be influenced by family & friends with GoodGuide.com info				
Variable	B	SE	Odds ratio	p
VBN Theory: Biospheric Value	.149	.332	1.160	.654
Altruistic Value	.373	.332	1.452	.261
Egoistic Value	.095	.181	1.099	.601
Aware of Consequences	-.423	.329	.655	.199
<b>Ascription of Responsibility</b>	<b>.560</b>	<b>.256</b>	<b>1.750</b>	<b>.029</b>
Personal Envi Norm	.012	.214	1.012	.954
NEP Scale	.256	.390	1.292	.511
Dependent Variable 29: respondent is willing to use a GoodGuide.com smartphone app when shopping				
Variable	B	SE	Odds ratio	p
VBN Theory: Biospheric Value	.076	.339	1.079	.823
Altruistic Value	.396	.362	1.486	.274
Egoistic Value	.197	.188	1.217	.296
Aware of	-.054	.332	.948	.872

Consequences				
Ascription of Responsibility	.301	.264	1.352	.254
<b>Personal Envi Norm</b>	<b>.435</b>	<b>.223</b>	<b>1.545</b>	<b>.052</b>
NEP Scale	.092	.397	1.096	.817

Table 1. Logistic regression models for all dependent variables

## 5. Discussion of Findings

The main purpose of this study was to describe and analyze the attributes of respondents using the VBN theory and NEP scale and distinguish those whose purchasing-related behaviors would be influenced by GoodGuide.com information in a number of ways from other respondents who would not be influenced by this information. These theories were tested on a sample of about 125 students, consisting of both undergraduate and MBA students taking the course “Management Information Systems” in the Faculty of Business Administration of the University of New Brunswick Fredericton, Canada, using an experimental treatment and the survey research method.

In terms of separating study respondents into the two groups for the six dependent variables considered in this study, the following predictors emerged as significant and important predictors: biospheric values, ascription of personal responsibility, and personal environmental norm. There are high correlations observed between biospheric values, altruistic values, and the mean of the NEP scale. “This result is consistent with the findings of current research on values where the dimensionality between altruistic and biospheric values has been frequently discussed and where it is sometimes found that they are inseparable” (Stern et al., 1995; Nordlund & Garvill, 2002; de Groot & Steg, 2008).

The study findings also show the importance of three predictor variables: biospheric values, ascription of responsibility, and personal environmental norm. Further analyses were conducted using t-tests (Table 2) and it was clear that respondents who were willing to be influenced by GoodGuide.com information in a number of ways scored higher on these three predictor variables (i.e., Group 2) than the other group consisting of those who would be less likely to be affected by this information (i.e., Group 1).

Variable	Mean	SD	t	df	p
Dependent Variable 21: Willingness to share GoodGuide.com info with family & friends via a social network					
Biospheric Values					
Group 1*	4.9444	1.36623	-5.766	117.659	.000
Group 2**	6.0969	.82887			
Ascription of Responsibility					
Group 1	3.9863	1.28350	-4.657	120	.000
Group 2	5.0714	1.22793			
Personal Environmental Norm					
Group 1	3.9521	1.50065	-4.227	111.054	.000
Group 2	5.0333	1.27184			
NEP Mean (Selected Items)					
Group 1	4.2163	.59662	-3.396	91.552	.001
Group 2	4.6310	.68660			
Variable	Mean	SD	t	df	p

Dependent Variable 22: Willingness to be influenced by family & friends with GoodGuide.com info					
Biospheric Values					
Group 1	4.8019	1.50907	-4.803	78.211	.000
Group 2	5.9179	.87820			
Ascription of Responsibility					
Group 1	3.7269	1.40103	-5.616	96.715	.000
Group 2	5.0179	1.07451			
Personal Environmental Norm					
Group 1	3.7472	1.56015	-4.529	97.903	.000
Group 2	4.9353	1.24802			
NEP Mean (Selected Items)					
Group 1	4.1737	.53476	-3.218	117.968	.002
Group 2	4.5404	.71339			
Dependent Variable 29: Willingness to use a GoodGuide.com smartphone app when shopping					
Variable	Mean	SD	t	df	p
Biospheric Values					
Group 1	4.8405	1.44391	-5.159	92.285	.000
Group 2	5.9697	.88851			
Ascription of Responsibility					
Group 1	3.8051	1.27566	-5.661	123	.000
Group 2	5.0568	1.19598			
Personal Environmental Norm					
Group 1	3.6596	1.53761	-5.844	100.817	.000
Group 2	5.0985	1.11530			
NEP Mean (Selected Items)					
Group 1	4.1905	.57419	-3.166	118.376	.002
Group 2	4.5558	.69433			

\* Group 1: sample respondents who are more likely to be influenced by GoodGuide.com information in a number of ways.

\*\* Group 2: sample respondents who are more likely to be influenced by GoodGuide.com information in a number of ways.

Table 2. *T-test results for Means of Significant Predictor Variables: Biospheric Values, Ascription of Responsibility, and Personal Environmental Norm for Selected Dependent Variables*

## 6. Conclusions and Future Research Directions

This study's logistical regression results show that respondents who are more likely to be influenced in a number of ways by GoodGuide.com information scored higher on biospheric values, ascription of responsibility, and personal environmental norm. In terms of research implications, this study's results point to the importance of the VBN theory in studying variables that may be important in understanding potential consumer purchasing intentions and behavior with respect to "green" products and services as influenced by information they gather from online sustainability information infomediaries such as GoodGuide.com. These infomediaries play an important role in translating complex information about green products and services in a language that is understandable to the average consumer who is under both financial and time pressures when shopping for household goods.

In terms of future research efforts, it is suggested that consumers who actually used GoodGuide.com information online using either their laptops, desktops, or smartphones prior or during their shopping experiences should be surveyed in order to test the theoretical concepts used in this study.

On the practical side, this study's results have useful implications for corporate marketing and promotional campaigns, educational institution curriculum programs, and governmental policy campaigns as well, all of which should focus on the development of biospheric values, ascription of responsibility, and personal environmental norm. This suggestion highlights the educational aspect of preparing consumers to act more intelligently in a world where consideration of the environmental impacts of products and services is crucial in promoting sustainability in the business operations of firms. But the development of these attributes will not happen overnight and will entail a continuous effort in various fronts simultaneously --- educational institutions, corporate marketing arsenal, and governmental promotional initiatives --- in order to gain maximum impact on the consumers' consciousness.

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