The Water Project:

Assessing Awareness, Perception and Effective Messaging of Water Issues

Target Audience: Young people ages 18-29

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Executive Summary

Objectives:

American University School of Communication students enrolled in Public Communication Research with Professor Dotty Lynch in the Fall of 2013 conducted research for The Water Project. This research was targeted to measure the awareness and concerns of young people regarding water issues. This report includes the methodology, results, and analysis of the research.

The goal of this research was to measure the awareness of young people on water issues as well as develop solutions for the water crisis. In order to do this, students researched the habits and thoughts of young people regarding how they obtain information on environmental issues, and their overall awareness of these concerns. Through focus groups, a telephone survey and an online survey, students researched how water issues like consumption, contamination, and shortages relate to and are perceived by young people.

Overview:

Two focus groups were conducted in class and a telephone survey was conducted by each student in order to create an online survey. The final survey was administered online through Qualitrics.com. Respondents were encouraged to take the survey through email and Facebook, which created a convenience sample of family and friends. These respondents were surveyed on various issues including media habits, awareness of water shortages and contamination, and perception efforts to improve these water issues. Students also collected demographic information in order to understand the audience surveyed, and appreciate trends and biases in the survey.

Findings:

There is a large amount of unawareness in the target audience about water issues and a lot of respondents are not concerned about water issues.

The majority of people (67%) said they do not know where the water they use comes from. A combined 49% of respondents said they were "somewhat unaware" (19%) or "very unaware" (30%) of any water contamination in their community's tap water. A combined 66% of respondents said they were "very satisfied" or "somewhat satisfied" with the water quality in their community.

There is little correlation between the respondent's geographical region and his/her concern for water shortage.

A cross-tabulation was conducted comparing zip codes that had been coded into regions and the respondent's concern for water shortage. A large percentage of people

considered themselves "somewhat concerned" or "neither concerned nor unconcerned" despite their region.

Most people do not often discuss water or environmental issues.

Only 4% of respondents said they "always" discuss ways to conserve water with the people they know, and only 5% said they "most of the time" discuss it, while 3% of people responded that they "always" discuss ways to combat water pollution with the people they know and 1% said they "most of the time" do this. Most respondents (72%) said they were unaware of any water conservation programs already in place in their community.

There is some correlation between concern about contamination in drinking water and likelihood of drinking recycled water.

Most respondents who had reservations about drinking recycled water said it was because they did not know how clean it was or because they thought it was "gross." A cross-tabulation showed 28% of respondents who said they "never" avoid drinking tap water for fear of contamination considered themselves "very likely" to drink recycled water and 34% of those who said they "never" avoid drinking water from the tap said they were "somewhat likely." About 42% of those who responded, "tap water is not contaminated" considered themselves "very likely" to drink recycled water.

Most respondents said they were "very likely" to trust a scientist to speak to them about water issues.

90% of respondents said they were "very likely" to trust a scientist to speak to them about water issues over a celebrity, a politician, an environmental activist, Robert Redfrod, Erin Brockovich, President Obama, journalists, or filmmakers.

The majority of people in the target audience are most likely to respond to an advertisement if it appeared on the internet.

The majority of people responded they would be most likely to respond to an advertisement if it appeared on the Internet rather than TV, radio, newspaper/magazine, documentary film or social media. On average, respondents said that they spent more time on the Internet each day than watching television, reading a newspaper or magazine, listening to the radio, or on social media.

More specifically, most people, despite household income, find their information about social or environmental issues through mainstream news websties.

Most respondents, despite differences in household income among the sample population, said they attained most of their information on social and environmental issues from mainstream news websites.

The messages that resonate most with the target audience are ones that affect them directly.

57% of respondents said they were more likely to respond to an advertisement focused on public health concerns or issues over environmental concerns or issues or recycling concerns or issues. Similarly, about 90% of respondents said they would be "very likely" to pay attention to messages if they could not turn the water on in their apartment.

Conclusions:

- The target audience is relatively unaware and unconcerned about water issues.

- People usually respond to messages that are affect them directly. Most people do not talk about water-related issues regularly.

- Most people who have reservations about drinking recycled water do not understand the concept or have psychological preconceptions.

- Most people would prefer to hear about water-related issues from a scientist.

- The Internet is the best way to communicate with the target audience, especially though mainstream news websites.

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Introduction

Purpose:

The purpose of this study was to discover how aware young people, ages 18-29, in the United States, are of water issues, including consumption, contamination, and shortages of the world's water supply. This survey also looked at online activity and preferred media sources in order to garner and understanding of how best to reach young people when communicating these issues. The goal of this study is to help The Water Project understand awareness of and reactions to the water crisis, and therefore, help to determine the best way to target this audience with specific messages and mediums.

Objectives:

This survey sought to determine the awareness of young people regarding the water issues and addressed the various factors that influence the way young people learn about and react to environmental issues. The survey aimed to measure the awareness of young people to discover what people know and what messages resonate with the target audience. This helps determine what messages will best contribute to a new campaign toward young people. The survey also aims to understand the different mediums through which young people attain their information. For example, understanding how often they use social media sites, or asking where they get most of their information will help create a campaign that will reach the largest number of young people possible through a medium they prefer.

Research Methodology

Research Design:

This study included primary, secondary, qualitative and quantitative research to acquire a well-rounded understanding of the target audience's awareness, perception and reaction to water issues. The study began with a literary review of a memo by *Public Opinion Strategies* on conservancy research, which explored the language and tactics used to elicit responses from voters about conservation issues. Students considered these research findings when approaching the issue of conservation.

From there, two focus groups of American University students taking the course were conducted. The focus groups gave insights into the awareness of water-related and environmental issues, students' attitudes and perceptions of these issues and ways to change them, and the resources young people use when learning abut various issues concerning water and environmental issues. The focus groups were used as a baseline to create surveys to be distributed.

Each student created a telephone survey to reach out to those who were not in the course or involved in the research process. Each student created a survey of about 25 questions to do preliminary research, and each student was responsible for calling five people to take their survey. This research then led to an online survey.

Each student created his/her own online survey, and from those questions, a larger web survey was created. The final survey was 35 questions, and each student was asked to distribute the web survey to their networks via email and Facebook. The survey garnered 195 responses.

Research Sampling Frame:

Survey respondents were enlisted through the distribution of each student in the course through Facebook and email. The participants used the link to take the survey through Qualtrics.com.

Research Sampling Method:

The method used was a web survey because it would garner large-scale results efficiently. Students agreed more people would be willing to answer an online survey than a telephone survey of this type. It also created convenience because it was a time-saving effort. Because students sent the survey out to their own networks, a convenience sample of peers was created. The survey targeted people between the ages of 18-29.

Data Gathering Procedure:

The online survey was created on Qualtrics.com and distributed with a link to this site. The data was gathered after the link was distributed via email and Facebook. Qualtrics.com produced the results of the research.

Statistical Tools Used:

Qualtics.com was used to organize the data. This included showing frequencies and cross-tabs of the data. SPSS was also used in this manner.

Interviewing Dates:

The survey was released on Friday, November 15, 2013 and was closed on Thursday, November 21, 2013.

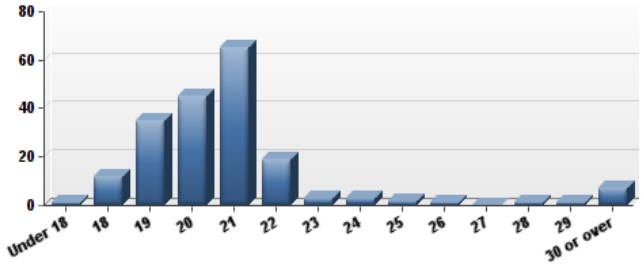
Analysis of Results

With the objectives of determining awareness and perception of water issues, as well as messaging and media usage in our target audience in mind, students collected and analyzed data regarding these issues.

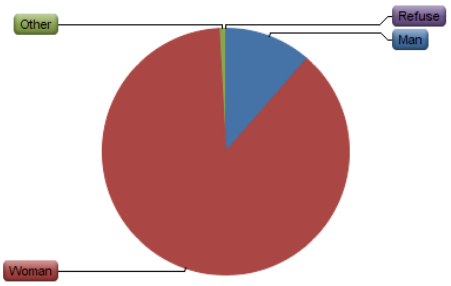
Demographics:

The survey was targeted to people between the ages of 18-29, but the survey results were skewed between the ages of 18-22. About 90% of respondents were between the ages of 18-22. The majority of respondents (83%) identified as Caucasian. The majority of respondents (88%) were women.

Age of Respondents

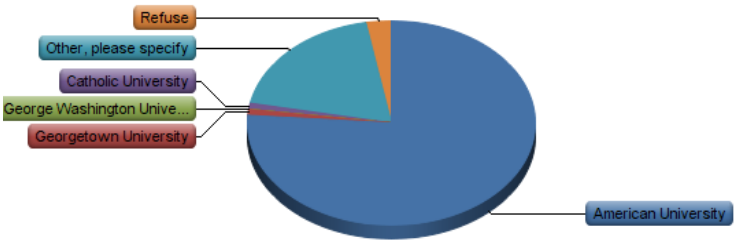


Gender of Respondents

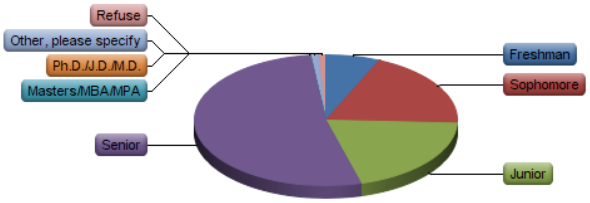


In regards to marital status, the large majority (97%) of respondents were single. In regards to schooling, 92% of respondents were students, and 76% were specifically American University students. In regards to level of schooling, the majority of students were upperclassmen in college. 52% of student respondents were college seniors, and only 7% of student respondents were college freshmen.

College Attended



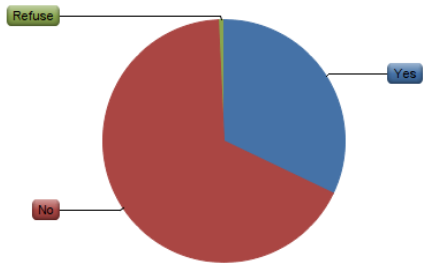
Year in College



Awareness:

The survey focused a great deal on determining the awareness of respondents relating to water issues. The majority of respondents, 67%, said they do not know where the water supply they use comes from, while 32% said they knew where their water supply comes from, and 1% of respondents refused.

Do You Know Where Your Water Supply Comes From?



When asked how familiar they were with water contamination, water scarcity, unsafe drinking water and agricultural usage, the majority of people said they were "somewhat familiar" with each category.

#	Question	Very familiar	Somewhat familiar	Neither familiar nor unfamiliar	Somewhat unfamiliar	Very unfamiliar	Refuse	Total Responses	Mean
1	Water contamination	21	73	13	21	9	0	137	2.45
2	Water scarcity	29	74	13	13	8	0	137	2.25
3	Unsafe drinking water	26	72	17	14	8	0	137	2.31
4	Agricultural usage	17	45	21	32	22	0	137	2.98

Awareness of Water Supply Levels and Conservation Efforts:

About 21% of respondents said they were "very familiar" with the issue of water scarcity; just under 6% of respondents said they were "very unfamiliar" with the issue. The majority of respondents, 54%, said they were "somewhat familiar" with the issue of water scarcity.

Awareness of Water Pollution:

When asked how aware they were of water pollution in their community, respondents had a variety of answers. Only 7% of respondents considered themselves "very aware" of the issue in their community; 33% said they were "somewhat aware;" 16% said they were "neither aware nor unaware;" 20% said they were "somewhat unaware;" and 24% said they were "very unaware."

Awareness of Water Contamination:

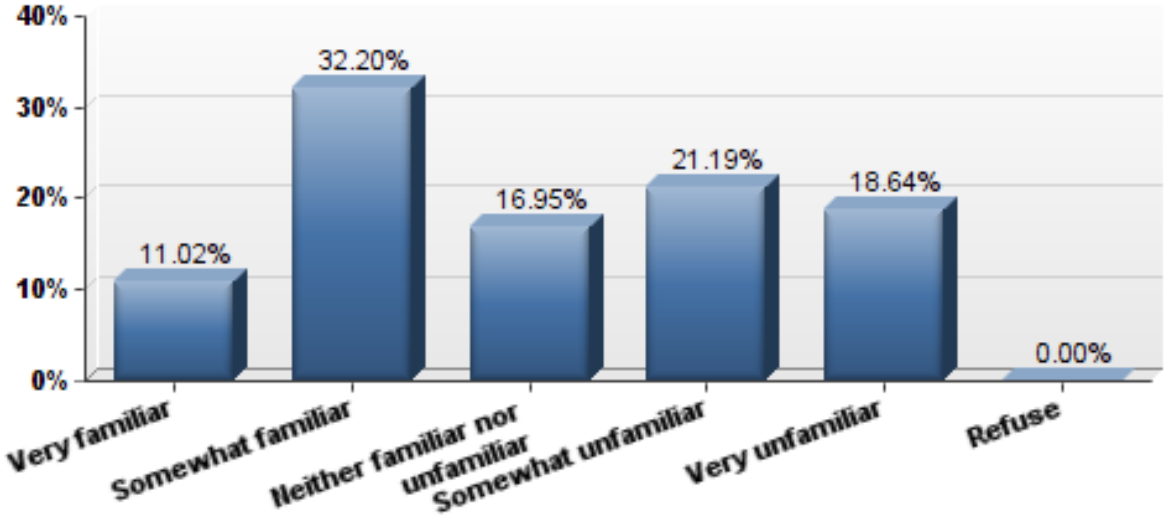
About 53% of respondents said they were "somewhat familiar" with water contamination issues and about 15% of respondents answered they were "very familiar" with contamination issues. Only about 6% of respondents said they were "very unfamiliar" with water contamination issues. Similarly, the issue of unsafe drinking water resulted in similar responses. About 53% of respondents said they were "somewhat familiar" with unsafe drinking water issues. About 18% said they were "very familiar" with the issue and about 6% said they were "very unfamiliar" with the issue of unsafe drinking water.

When considering water contamination in their community's tap water, only 6% said they were aware of any water contamination issues. 18% of respondents said they were "somewhat aware;" 26% said they were neither aware nor unaware; 19% said they were "somewhat unaware;" and 30% said they were "very unaware."

Awareness of Water Recycling:

The term "water recycling" was familiar to some respondents, but not others. Only 11% of respondents considered themselves "very familiar" with water recycling; 32% said they were "somewhat familiar;" 17% said they were "neither familiar nor unfamiliar;" 21% said they were "somewhat unfamiliar;" and 19% said they were "very unfamiliar" wit the term "water recycling."

Awareness of Water Recycling



Perception and Concern:

Concern about Water Supply Levels:

When collecting data about how concerned participants were about the water supply levels in their community, there was no one large majority answer. 30% of respondents said they were "somewhat concerned;" 20% said they were "very unconcerned;" 13% said they were "somewhat unconcerned;" and only 8% said they were "very concerned." Interestingly, a significant percentage of respondents, 28%, said they we "neither concerned nor unconcerned." With a large cumulative percentage of people who are "neither concerned nor unconcerned," "somewhat unconcerned" or "very unconcerned," the data indicates that communicating issues and eliciting responses to the target audience about water supply

may be difficult.

#	Answer	Bar	Response	%
1	Very concerned		11	8%
2	Somewhat concerned		40	30%
3	Neither concerned nor unconcerned		38	28%
4	Somewhat unconcerned		17	13%
5	Very unconcerned		27	20%
6	Refuse		1	1%
	Total		134	

Students conducted a cross-tabulation to determine if there was a correlation between the respondent's zip code of residence and how concerned he/she was about water supply levels in his/her community. The zip codes were coded into regions designated by the Census Bureau and Washington, DC, since it had such a large population of respondents. It was hypothesized that respondents in the West would be most concerned about water supply levels. According to research, about 12% of respondents living in the West said they were "very concerned" and about 41% said they were "somewhat concerned." This responses were somewhat comparable to the level of concern in other regions. 10% of those in the North East considered themselves "very concerned" and about 27% considered themselves "somewhat concerned." Of those in the South, about 8% said they were "very concerned" and 50% said they were "somewhat concerned." In Washington DC, only 5% of respondents said they were "very concerned" and 25% said they were "somewhat concerned." Finally, in the Midwest, no respondents considered themselves "very concerned" and 50% said they were "somewhat concerned." Overall, a large percentage of people considered themselves "somewhat concerned" despite their region of residence. From this, we can conclude, there is little if any correlation between these two variables.

What is the zip code of your residence? * How concerned are you about water supply levels in your community? Crosstabulation

% within What is the zip code of your residence?

		How concerned are you about water supply levels in your community?						Total
		Very concerned	Somewhat concerned	Neither concerned nor unconcerned	Somewhat unconcerned	Very unconcerned	Refuse	
What is the zip code of your residence?		10.0%	25.0%	20.0%	30.0%	15.0%		100.0%
	North East	10.0%	26.7%	33.3%	10.0%	16.7%	3.3%	100.0%
	Washington DC	5.0%	25.0%	32.5%	12.5%	25.0%		100.0%
	Midwest		50.0%	25.0%		25.0%		100.0%
	South (excluding Washington DC)	8.3%	50.0%	16.7%	8.3%	16.7%		100.0%
	West	11.8%	41.2%	23.5%	11.8%	11.8%		100.0%
	Refuse	9.1%	18.2%	36.4%		36.4%		100.0%
Total		8.2%	29.9%	28.4%	12.7%	20.1%	0.7%	100.0%

Concern about Water Pollution:

Respondents had varied answers when asked how concerned they were about water pollution in their community. 40% of respondents said they were "somewhat concerned" about the issue; 18% said they were "neither concerned nor unconcerned;" 16% said they were "very concerned;" 13% answered that they were "very unconcerned;" and 12% said they were "somewhat unconcerned."

However, despite a variety of answers about concern for water pollution, very few people discuss ways to combat water pollution with the people they know often. Only 3% of respondents said they "always" discussion ways to combat water pollution, and only 1% of respondents said they discuss it "most of the time." Meanwhile, 17% said they "sometimes" discuss it, 45% said they "rarely" discuss it, and 33% said they "never" discuss ways to combat water pollution.

Concern about Water Quality:

While many people said they were aware or somewhat aware of the issues of water quality, most people we "very satisfied" or "somewhat satisfied" with the water quality in their communities. About 34% of respondents said they were "very satisfied," and 32% said they were "somewhat satisfied." About 17% of respondents said they were "neither satisfied nor dissatisfied;" 12% said they were "somewhat dissatisfied;" and a mere 4% said they were "dissatisfied" with the water quality in their community.

When considering how often they avoid drinking water from the tap because of fears of contamination, 28% of respondents said they "never" avoid drinking from the tap for this reason. 24% of respondents said they "rarely" avoid it; 12% said they "sometimes" avoid it; another 12% said they avoid it "most of the time;" and only 8% said they "always" avoiding drinking water from the tap because of these fears of contamination.

Concern about Water Recycling:

The question of the likelihood of drinking recycled water elicited a variety of responses. Only 19% of respondents said they would be "very likely" to drink recycled water, but 32% said they would be "somewhat likely" to drink recycled water. 19% of respondents said they were "neither likely nor unlikely" to drink recycled water; 14% said they were "somewhat unlikely;" and 15% considered themselves "very unlikely" to drink recycled water.

About 50% of respondents who expressed reservations about recycled water said it was because they were afraid of contamination or the purification process. About 32% of those were most concerned because they thought it was "gross" or for psychological reasons, thinking that, for example, "someone else already drank it" or "it's hard to shake preconceptions." Other respondents said they had reservations about the taste of the water, they did not understand the process, or they have no reservations about drinking recycled water.

Students did a cross-tabulation to consider whether how fear of contamination from tap water correlates to the likelihood of drinking recycled water. Comparing the results from the questions, it was found that 28% of respondents who said they "never" avoid drinking tap water for fear of contamination considered themselves "very likely" to drink recycled water, and 34% of those who said they "never" avoid drinking water from the tap because of fears of contamination said they were "somewhat likely." Moreover, about 42% of those who responded, "tap water is not contaminated" considered themselves "very likely" to drink recycled water. These are interesting findings because those who are less concerned about contamination in their tap water are also generally more likely to drink recycled water.

However, about 33% of respondents who said they "always" or "most of the time" avoid drinking water from the tap said they were "very unlikely" to drink recycled water.

How likely would you be to drink recycled water? * How often do you avoid drinking water from the tap because of fears of contamination? Crosstabulation

% within How likely would you be to drink recycled water?

		How often do you avoid drinking water from the tap because of fears of contamination?						Total
		Always	Most of the Time	Sometimes	Rarely	Never	Tap water is not contaminated	
How likely would you be to drink recycled water?	Very likely			13.6%	9.1%	40.9%	36.4%	100.0%
	Somewhat likely	7.9%	10.5%	10.5%	31.6%	28.9%	10.5%	100.0%
	Neither likely nor unlikely	18.2%	4.5%	4.5%	36.4%	18.2%	18.2%	100.0%
	Somewhat unlikely	12.5%	18.8%	12.5%	25.0%	25.0%	6.3%	100.0%
	Very unlikely	5.6%	27.8%	22.2%	11.1%	22.2%	11.1%	100.0%
	Refuse		100.0%					100.0%
Total		8.5%	12.0%	12.0%	23.9%	27.4%	16.2%	100.0%

Messaging and Media:

Environmental and Water Messaging:

Students' data also focused on messaging to determine how the best way to communicate environmental and water messages to the target audience. One question asked about how likely people would be to listen to certain messages.

#	Question	Very likely	Somewhat likely	Neither likely nor unlikely	Somewhat unlikely	Very unlikely	Refuse	Total Responses	Mean
1	The President of the United States warns of a water shortage	67	39	7	4	5	0	122	1.70
2	You cannot turn on the water in your apartment	110	8	3	0	1	0	122	1.15
3	Your friends warn you of a water shortage	29	61	22	8	2	0	122	2.12
4	Your local government warns of a water shortage	49	51	16	4	2	0	122	1.84
5	Your neighbor stops watering their lawn on their regular schedule	11	10	27	28	44	2	122	3.74

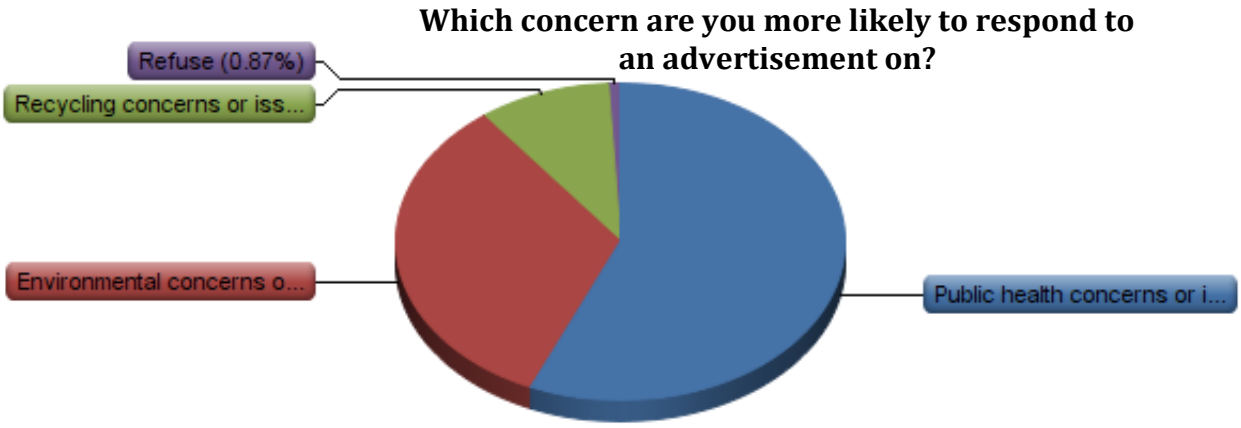
As is evidenced by the data, about 90% of respondents said they would be "very likely" to pay attention to messages if they could not turn on the water in their apartment. This

proves that most people will become concerned or listen to messages if it directly affects them.

Secondly, people will pay attention to messages from authority figures. About 59% of respondents said they would "very likely" to pay attention to a message of water shortage from the President of the United States, and about another 34% said they would be "somewhat likely" to do so. Somewhat similarly, about 40% of respondents said they would be "very likely" to listen to a warning from the local government about a water shortage, and about another 42% said they would be "somewhat likely."

Addressing Concerns through Messaging:

The majority of respondents (57%) said they would be most likely to respond to an advertisement focused on public health concerns. This is similar to the previous data that proved that most people become concerned when the message is targeted to directly affect them. Another 33% of respondents said they would most respond to advertisements focused on environmental concerns or issues, and 10% said they would most respond to recycling concern or issue advertisements.



When addressing the issues of messaging, it is also important consider who respondents trust to relay messages about water issues. An overwhelming percentage (89%) of respondents said they would be "very likely" to trust a scientist to speak to them about water issues.

#	Question	Very likely	Somewhat likely	Neither likely nor unlikely	Somewhat unlikely	Very unlikely	Refuse	Total Responses	Mean
1	A scientist	103	12	0	0	1	0	116	1.14
2	A celebrity	4	14	32	26	38	1	115	3.72
3	A politician	5	45	35	17	13	0	115	2.90
4	An environmental activist	57	38	8	9	3	1	116	1.84
5	Robert Redford	4	14	50	11	23	12	114	3.62
6	Erin Brockovich	13	17	46	9	17	12	114	3.32
7	President Barack Obama	41	49	11	9	4	1	115	2.03
8	Journalists	15	53	30	10	7	0	115	2.49
9	Film makers	14	42	31	18	10	0	115	2.72

Mediums for Communication:

The study also attempted to identify the best mediums to communicate messages with the target audience. The students mostly considered the following mediums: television, newspapers or magazines, radio, internet and social media. On average, respondents spent more time each day on the Internet and social media than watching television, reading a newspaper or magazine, or listening to the radio.

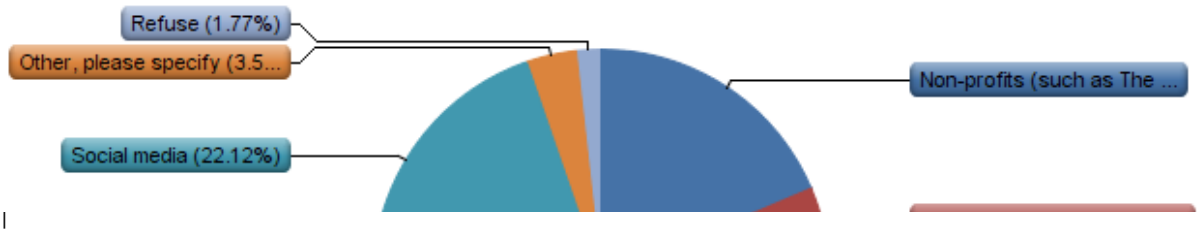
#	Answer	Min Value	Max Value	Average Value	Standard Deviation	Responses
1	Watching television	0.00	10.00	2.06	1.92	109
2	Reading a newspaper or magazine	0.00	16.00	1.52	2.12	99
3	Listening to the radio	0.00	15.00	1.19	2.07	96
4	On the Internet	1.00	24.00	6.72	4.56	113
5	On social media	0.00	24.00	4.96	4.43	112

Similarly, when asked to rank media in order of how likely they would be to pay attention to an advertisement an overwhelming percentage of respondents said they would first pay attention to a message on the Internet.

#	Answer	1	2	3	4	5	6	Total Responses
1	the Internet	44	34	15	9	7	3	112
2	TV	21	24	24	20	13	10	112
3	Radio	1	3	14	27	33	34	112
4	Newspaper/magazine	18	22	19	20	19	14	112
5	Documentary film	19	9	17	22	30	15	112
6	Social Media	9	20	23	14	10	36	112
	Total	112	112	112	112	112	112	-

These findings indicate that the best medium to reach the target audience would be on the internet. From there, it is important to consider what websites the target audience uses most often to attain their information for social and environmental issues. The highest percentage of respondents, 43% said they were most likely to garner information from mainstream news websites. Another 22% said they received their information via social media; 19% said they would get information from non-profits; 5% said they would get information on these issues from government agencies; and another 5% of respondents said they would be most likely to get this information from blogs.

From which websites do you get most of your information about social and environmental issues?



From which websites do you get most of your information about social and environmental issues? * Approximately, what is your household income? Crosstabulation

% within From which websites do you get most of your information about social and environmental issues?

		Approximately, what is your household income?						Total
		Under $25,000	$25,001 to $50,000	$50,001 to $75,000	$75,001 to $100,000	$100,001 and above	Refuse	
From which websites do you get most of your information about social and environmental issues?	Non-profits (such as The Nature Conservancy or the Sierra Club)	23.8%	4.8%	9.5%	19.0%	33.3%	9.5%	100.0%
	Government agencies	16.7%	16.7%			33.3%	33.3%	100.0%
	Mainstream news websites	24.5%	10.2%	12.2%	10.2%	24.5%	18.4%	100.0%
	Blogs	33.3%		16.7%		16.7%	33.3%	100.0%
	Social media	4.0%	20.0%	12.0%	28.0%	16.0%	20.0%	100.0%
	Other, please specify		50.0%		25.0%		25.0%	100.0%
	Refuse					50.0%	50.0%	100.0%
Total		18.6%	12.4%	10.6%	15.0%	23.9%	19.5%	100.0%

An interesting finding of the data in regard to media was in regard to household income. A cross-tabulation was done to analyze these results. In almost every category of income, most respondents said that they get most of their information on social and environmental issues from mainstream news websites. This data would indicate that in general, the best website to communicate messages about social and environmental issues to audiences of all different incomes, would be mainstream news websites.

Research Limitations

Assumptions

While taking this survey, respondents may have recognized that the survey was about the environment and awareness/concern regarding water-focused issues. It is possible that respondents assumed that the survey was attempted to assess levels of environmental

involvement, and that respondents subsequently responded to questions more positively than they actually feel.

Limitations

There were a number of demographic limitations in this study, which prevented the results from being an accurate generalizable sample of young people between the ages of 18 and 29.

Age: The survey results were skewed between the ages of 18-22, with about 90% of respondents were between the ages of 18-22. This means that only a portion of the target age range was strongly represented in the results, with respondents between the ages of 23 and 29 being underrepresented.

Gender: Gender representation also presented a limitation in the study. The overwhelming majority of 88% was female, leaving the male demographic underrepresented.

Ethnicity: An almost equally high majority was the amount of Caucasian respondents, coming in at 82%. All other ethnic groups were underrepresented in the results.

Level of Education: The final limitation to the study is the respondents' level of education. 92% of respondents were students, and 76% were specifically American University students. In regards to level of schooling, the majority of students were upperclassmen in college. 52% of student respondents were college seniors, and only 7% of student respondents were college freshmen. The group was not representative of other young peoples' occupations.

Recommendations

Conclusion: The target audience is relatively unaware and unconcerned about water issues. *Recommendation:* Educate the target audience, and the younger generation, on water issues. By promoting awareness, more people will have an understanding of the water crisis, and more people will take action. Propose teaching water issues in school systems to make the younger generation more aware, and educate the target audience through public service announcements and other messages.

Conclusion: People usually respond to messages that are affect them directly. Most people do not talk about water-related issues regularly.
Recommendation: Focus advertisements and messages on health concerns where possible. Individualize messages regarding water issues, because the more personal, the more people will be interested, concerned and likely to take action. Meanwhile, promote conversation about the topic with these powerful messages so that more people begin talking about water and environmental issues with the people they know.

Conclusion: Most people who have reservations about drinking recycled water do not understand the concept or have psychological preconceptions.
Recommendations: Educate the target audience about how recycled water works. Use online advertisements, tutorials, and have exhibits that explain or demonstrate the purification process. Communicate the truth about tap water verses bottled water, and more people will understand the concept and be willing to let go of their preconceptions.

Conclusion: Most people would prefer to hear about water-related issues from a scientist.
Recommendation: Use well-known and well-respected scientists as spokespeople. These educated people will be able to convey important messages with scientific backgrounds. Many people will trust the information more if it is credited with a scientist spokesperson.

Conclusion: The Internet is the best way to communicate with the target audience, especially though mainstream news websites.
Recommendation: Post good content, such as advertisements, tutorials, or public service announcements on the Internet often. Where possible, employ the use of mainstream news websites, for example with an op-ed piece by a well-known scientist about the topic. This will garner the attention of many people in the target audience and elicit action.

Appendix

Coded Open Ends:

Question #2: What Water-Related Issues Have You Heard About?

1. Water Pollution/Contamination
   - ❖ Water pollution all over the world

- Water Pollution in China
- Pollution
- Pollution
- Pollution
- Pollution
- Oil Spills
- Dirty Water
- Dirty water
- Massive floats of plastic garbage in the oceans
- Harmful chemicals due to toxic dumping
- Water constantly becoming dirty and chemicalized
- Water pollution
- Floride in water
- Water pollution
- Contaminants in Drinking Water
- Contamination
- Water cleanliness
- Water is unclean
- I know that big-label companies have been dumping toxins straight into river water used for drinking in Asia
- Contamination from factories
- Water pollution
- Pollution
- Water-borne disease
- Pollution
- Pollution
- Pollution levels in the Chesapeake Bay
- The Potomac river is so polluted that normal fish cannot live there and the fish that do have developed an extra filtration system or something to live
- Cleanliness of water
- Illness due to unclean water-sanitation
- Water pollution
- Cleanliness
- Pollution
- Contaminated Water
- Contaminating municipal water systems
- Water-borne illness
- Water contamination
- Water contamination in the Potomac as well as around the world
- Sanitation
- Water pollution
- Aquifer Pollution
- Water pollution
- Water pollution
- Contaminated water in the developing world
- Water contamination

- Pollution
- Dangerous drinking water
- Pollution
- Oil Spills
- Water pollution
- Pollution
- Water pollution
- Pollution
- Clean water issues
- Presence of mercury in many communities' water supply
- Pollution
- Sanitation issues (no toilets, etc.)
- Sewage overfill in DC
- Town dumping waste into public water
- Lack of clean water irrigation
- Draining ground water, poisoning/dumping toxic waste into water (from big corporations and hi-fashion places)
- Plastic in the ocean
- Large amounts of plastic found in ocean water
- Water pollution in industrialized countries
- Water having too much lead in it
- Water pollution
- Water quality
- Contamination
- Filtering, making sure chemicals aren't in water
- Pollution
- Pollution
- Water contamination

2. Water Availability/Scarcity
   - Lack of clean water
   - Lack of clean water
   - Lack of water in some places, people using too much water in other places
   - Clean Water in the Developing World
   - Water shortages
   - People having lack of water
   - Limited Water supply
   - Clean water issues in foreign countries
   - Droughts
   - Scarcity of water in other areas of the US and the world
   - Droughts around the country
   - Lack of clean water
   - Droughts
   - Water availability in Central Asia and the Middle East
   - Water Wars in Countries with Limited Resources
   - Shortages

- Water Shortage
- Droughts
- Water preservation efforts
- Issues related to the amount of people who cannot access clean water in other countries
- The amount of clean water left in the world
- Lack of clean water in developing countries
- Water scarcity
- Water shortages
- Water is quickly becoming a limited natural resource here in the United States
- Water scarcity
- Lack of fresh water
- Lack of drinking water
- Water wars
- Water sources disappearing
- Lack of fresh water
- Desertification
- Shortages
- Wasting water during showers, washing dishes, etc.
- Lack of water in developing countries
- Scarcity
- Access to clean waters
- Conservation
- Many people in third world countries don't have access to clean water
- Scarcity of water
- Demand for clean water
- Water shortage- not enough for the world
- Depletion of freshwater resources
- Water scarcity
- Scarcity
- Shortages across the globe
- Drought
- Water shortage
  Scarcity
- Unequal access to water
- Water shortage
- I know with our growing population, we wont have enough resources (including water) to support everyone on the planet
- Water scarcity/desertification
- Unequal access to water
- Lack of access to clean water
- Water scarcity
- California dispute over water supply and environmental sustainability of water sources
- Lack of clean water for people in 3rd world countries

- Water shortages in desert countries like African countries and middle eastern countries like Yemen
- Water shortage in the Midwest and west coast
- Lack of drinking water
- Drought prevention/management
- Water shortages

3. Agriculture
   - Fertilizer run-off
   - Run-off
   - Stormwater runoff
   - Over-consumption from agriculture and industry
   - Water runoff
   - Runoff
   - Toxic runoff
   - Water pollution from runoff
   - Storm-water runoff
   - Runoff contaminating the water supply
   - Agriculture use
   - Agricultural run-off
   - Water pollution from agricultural runoff
4. Tap Water/Bottled Water/Recycling
   - Tap-water purity
   - Waste water recycling
   - Waste of water in water bottles
   - Use of plastic water bottles
   - Tap Water is more regulated than bottled water
   - Bottled water
   - Cost of bottled water
   - There is recycling and water bottles then just reusing water and not wasting it
   - Tap water v. Bottled water
   - Tap water quality issues
   - Tap water = good
   - Controversy over bottled water v. tap water
   - Take back the Tap
   - Bottled v. Tap water
   - Bottled water has many environmental, health, economic and human rights issues
   - Take back the tap
   - The hazards of bottled water
   - The purity of tap water
   - Take back the Tap initiative in Washington DC
   - Tap water is better
   - Take back the tap
   - Tap water issues
5. Fracking

- Hydrofracking
- Issues Related to Fracking in the U.S.
- Fracking, water use rights
- Fracking
- Fracking fluid
- Hydraulic fracturing
- Fracking
- Fracking
- Fracking ruining the water supply
- Natural gas from fracking

6. Flooding
   - Flooding
   - Flood
   - Flooding
   - Flooding
   - Floods
7. Acidification
   - Acidifying our oceans
   - Acidification
   - Acid Rain
   - Acid Rain
   - Ocean acidification
   - Water acidity
   - Acid Rain
8. Polar Ice Caps/Sea-Levels
   - Sea-level rise and ocean salinity
   - Ice caps melting
   - As the ice caps are melting, the water is rising and at some point, places that are low (such as places in Florida and Bangladesh) will be covered
   - Rising sea levels
   - Rising sea level
   - Melting glaciers
   - Rising water levels
   - Polar ice caps melting causing water levels to rise
   - Ocean levels rising
   - Glaciers melting
9. Water Rights/Privatization of Water
   - Water Rights
   - Rights
   - Corporations trying to privatize water
   - Water privatization
   - Water privatization
10. None
    - None
    - None

- None
- None
- None
- None
- None
- None
- None
- I have not heard about any water-related issues

11. Other
    - There is some contaminated water in my building apparently
    - Ecoli
    - Oyster populations and their importance in the Chesapeake Bay
    - Red Tide
    - Fluoridated water
    - The global water crisis
    - Waterborne illness
    - People swimming in reservoirs
    - Calcium Build-up
    - The containment of water on indigenous reservations
    - The lack of water being equally distributed
    - Lack of water contributing to urban food deserts
    - The water from faucets tastes like poo
    - Eutrophication/dead zones
    - Water mining
    - Algae-blooms
    - Mangrove loss
    - Rise in water temperature
    - Overuse
    - Groundwater mining
    - The water fountain in my dorm is broken?
    - Environmental effects as a result of the increasing use/need for human consumption and industrial use
    - Water resource distribution Domestic Privatization of Water International Privatization of Water
    - Water wars in Bolivia
    - Eutrophication of lakes and streams
    - Sex-changing of species in water environments
    - Water and climate chaos
    - De-salination techniques
    - The lakes in Michigan are dying up and water levels are receding. This has hurt some of the small port towns in Michigan economically.
    - Ocean levels and water temperatures are also changing due to global climate change
    - We can only use a small percent of the seemingly tons of water on Earth
    - Urban Planning relations with water

- ❖ Water temperature rising
- ❖ Algae affecting water and ecosystems/fish within the water, parasites flourishing
  Algae blooms
- ❖ Waste plants non-compliance with water purification
- ❖ Ocean temperatures rising
- ❖ Sustainability
- ❖ Hydropower
- ❖ Storm water management
- ❖ Nasty iron tasting water; yellow/orange tinged water

Question #8: Please tell us about these water conservation programs in your community.

1. Take Back the Tap
   - ❖ Take back the tap
   - ❖ Take back the tap
   - ❖ TapDC
   - ❖ Take back the tap
   - ❖ Take back the tap
   - ❖ A lot of take back the tap issues
2. Water Bans or Restrictions
   - ❖ During the summer people are not supposed to water their plants during the day
   - ❖ My home city has "curfews" of water usage where it is not permissible to use water for things like lawn beautification at certain hours
   - ❖ Many homes have limits on the amount of water that can be used for things like watering a lawn
   - ❖ They also only water plants at night
   - ❖ Since I live in California, when I'm not in school, and there's normally a drought, especially in the summer, there are several ads on TV in the summer advising you to water your lawn at night to cut down on wasted water
   - ❖ Water bans for lawns in the summer
   - ❖ Our community alters watering weeks
   - ❖ Watering lawns once a week
   - ❖ Also when in drought levels, there's a lot on not washing cars, watering rarely and not in heat of the day
3. Anacostia River
   - ❖ The Anacostia Watershed Group has a few
   - ❖ Anacostia River
   - ❖ Anacostia River
4. American University campus programs
   - ❖ I've seen them around campus, but I haven't paid much attention
   - ❖ AU Programs

- AU reuses water, also doesn't used bottled water in programs and encourages reusable water bottle use
- Campus events

5. Efficient Utilities
   - Low flush toilets
   - Most sinks are automatic, thus preventing users from leaving the sink running for too long
   - Where I am from, there is a campaign to install a shower tool that lets you temporarily stop the flow of water when you are showering.
   - They work towards changing plumbing to be more efficient
   - They are only to use shower heads that conserve water and have toilets with the green flushers
6. Reducing Bottled Water
   - Reducing the use of water bottles and switching to tap water
7. Organizations in the Area
   - Food and Water Watch works with food and water rights
   - Food and Water watch
   - DC Department of the Environment Storm water Management program
   - DC Water works with local officials to ensure safe drinking water
   - Watersense certification helps conserve water resources
8. Price increase to Prevent Waste
   - The Water company charges more the more you use, so that keeps the usage levels down somewhat
9. Individual Level Communication
   - Encouraging water conservation practices on the individual level
   - In the city Department of Water Conservation, they always have flyers and information available about their determination to make the city aware of the shortage of water and the need to be careful how much you use
10. Other
    - IDK
    - Green roofs
    - Water barrels
    - Increase in green space/transforming pavement/unporus surfaces to porus
    - recycling rain water via collection in barrels
    - I live at college so we are encouraged to take short showers and only use what we need
    - There are signs by all the gutters so people don't throw trash into the sewer system
    - There is a Chesapeake bay organization that works to clean areas along the bay side and they also have prevention programs to raise awareness
    - Refining water and distribution goes through the Salt River Conservation Project
    - Restrictions in some communities on certain types of lawns that you can have in order to conserve water
    - ADWR

- ❖ Conservation Programs prevelant throughout DC, especially with capturing rainwater so that sewer system is not overwhelmed

Question #19: What are your reservations about drinking recycled water?

1. Contamination/Purification and Testing Process
   - ❖ How safe is it?
   - ❖ Does it go through the same testing as non-recycled water?
   - ❖ It might still be contaminated
   - ❖ I need to know more about the chemical processes that it undergo, as well as the testing for bacterial contamination
   - ❖ That is hasn't been properly decontaminated
   - ❖ Cleanliness
   - ❖ While I do understand that even regular tap water can be contaminated, I am nervous about drinking recycled water because I am not sure how thoroughly clean it will be. Just because it looks and smells fresh, doesn't mean it is.
   - ❖ Water born illnesses
   - ❖ Will it be entirely contaminate free?
   - ❖ The notion of drinking/using recycled water is somewhat unsettling because I'm not 100% sure it's absolutely clean
   - ❖ I don't know if it's clean enough
   - ❖ Cleanliness
   - ❖ Not sure how clean the water is
   - ❖ Trace elements of toxins in water
   - ❖ That it's not contaminated
   - ❖ Sanitation and health-related concerns
   - ❖ Still could have contamination such as the hormone contamination currently in DC water, also could have other minute levels of contamination enough to harm the immunocompromised
   - ❖ Safety contamination
   - ❖ The process to purify it
   - ❖ What contaminants are in there?
   - ❖ I'm not sure how well it works
   - ❖ How can you tell that it is safe to drink?
   - ❖ That the systems that clean it would not be working
   - ❖ Just some worries about the purification process
   - ❖ Concerned about methods used to get recycled water to safe drinking levels
2. Thinking it's "Gross"/Psychological
   - ❖ That someone else has already drank it
   - ❖ It just seems unsanitary, but if the water can really be filtered, it's probably okay to drink
   - ❖ It's most likely the idea of it more than anything
   - ❖ Kind of a "germaphobic" so that just doesn't sound appealing. I'd be suspicious of how clean it was.

- ❖ It's just the idea of where it comes from, logically I know it's considered safe but my instinct disagrees. Just don't tell me where it comes from and I'm good.
- ❖ Gross
- ❖ That sounds disgusting
- ❖ The negative stigma and image that comes from imagining your toilet water eventually being drank. Water can be purified in many ways successfully but there is always hesitation due to human error and just social norms
- ❖ It sounds like its been previously used some place like the sink people wash dishes and hands and clothes in
- ❖ It just seems risky
- ❖ It sounds disgusting
- ❖ Gross
- ❖ I feel like it is probably what companies are doing anyway and I just don't know, but the idea of drinking waste water is disturbing
- ❖ In all likelihood, it's good enough, but it's hard to shake preconceptions
- ❖ What if that came from sewage? That shit is nasty, literally
- ❖ What if it is not cleaned enough? It's poop water!

3. Don't know what it is
   - ❖ I'm not sure what recycled water is
   - ❖ I don't know the process
   - ❖ I do not know enough about the topic to have an educated opinion
   - ❖ I don't know anything about the recycling process and would be highly interested in finding out how safe it is
4. Taste
   - ❖ Taste
   - ❖ That the taste wont be the same
5. None
   - ❖ I don't really have any reservations. If they are selling it as drinking water, then it must have gone through some sort of cleaning process so I would assume that it would just as safe to drink as any other bottled water
   - ❖ None
6. Other
   - ❖ All water is recycled you morons. Take a science class.
   - ❖ I use water for other things, like laundry, that I would probably prefer using recycled water for first
   - ❖ I don't drink recycled water

Question #35: What is your zip code of residence?

*The regions used are areas designated by the Census Bureau.

1. North East
   - ❖ 02891 – RI
   - ❖ 10003 – NY

- 02891 – RI
- 02891 – RI
- 02881 – RI
- 07081 – NJ
- 06320 – CT
- 01003 – MA
- 07901 – NJ
- 19320 – PA
- 02667 - MA
- 13459 – NY
- 02478 – MA
- 06413 – CT
- 10573 – NY
- 11705 – NY
- 08619 – NJ
- 11565 – NY
- 08550 – NJ
- 07430 – NJ
- 18940 – PA
- 02852 – RI
- 08075 – NJ
- 11758 – NY
- 08003 – NJ
- 18360 –PA
- 07052 – NJ

2. Washington, DC
   - 20016 – DC
   - 20007 - DC
   - 20016 – DC
   - 20016 – DC
   - 20016 – DC
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3. Midwest
   - 52241 – IA
   - 60062 – IL
   - 60632 – IL
   - 60614 – IL
4. South (excluding Washington, DC)
   - 19810 – DE
   - 27516 – NC
   - 20723 – MD
   - 20816 – VA
   - 22180 – VA
   - 22124 – VA
   - 24060 – VA
   - 71854 – AR
   - 22182 – VA
   - 20874 – MD
   - 20837 – MD
   - 24541 – VA
5. West
   - 93117 – CA
   - 85282 – AZ
   - 85282 – AZ
   - 82070 – WY
   - 85050 - AZ
   - 85281 – AZ
   - 97403 – OR
   - 85282 – AZ
   - 94087 – CA

- 94583 – CA
- 80249 – CO
- 85750 – AZ
- 97225 – OR
- 85028 – AZ
- 85004 – AZ
- 85282 – AZ

6. Refuse
   - Refuse
   - Refuse

Cross-Tabulations:

What is the zip code of your residence? * How concerned are you about water supply levels in your community? Crosstabulation

% within What is the zip code of your residence?

		How concerned are you about water supply levels in your community?						Total
		Very concerned	Somewhat concerned	Neither concerned nor unconcerned	Somewhat unconcerned	Very unconcerned	Refuse	
What is the zip code of your residence?		10.0%	25.0%	20.0%	30.0%	15.0%		100.0%
	North East	10.0%	26.7%	33.3%	10.0%	16.7%	3.3%	100.0%
	Washington DC	5.0%	25.0%	32.5%	12.5%	25.0%		100.0%
	Midwest		50.0%	25.0%		25.0%		100.0%
	South (excluding Washington DC)	8.3%	50.0%	16.7%	8.3%	16.7%		100.0%
	West	11.8%	41.2%	23.5%	11.8%	11.8%		100.0%
	Refuse	9.1%	18.2%	36.4%		36.4%		100.0%
Total		8.2%	29.9%	28.4%	12.7%	20.1%	0.7%	100.0%

From which websites do you get most of your information about social and environmental issues? * Approximately, what is your household income? Crosstabulation

% within From which websites do you get most of your information about social and environmental issues?

		Approximately, what is your household income?						Total
		Under $25,000	$25,001 to $50,000	$50,001 to $75,000	$75,001 to $100,000	$100,001 and above	Refuse	
From which websites do you get most of your information about social and environmental issues?	Non-profits (such as The Nature Conservancy or the Sierra Club)	23.8%	4.8%	9.5%	19.0%	33.3%	9.5%	100.0%
	Government agencies	16.7%	16.7%			33.3%	33.3%	100.0%
	Mainstream news websites	24.5%	10.2%	12.2%	10.2%	24.5%	18.4%	100.0%
	Blogs	33.3%		16.7%		16.7%	33.3%	100.0%
	Social media	4.0%	20.0%	12.0%	28.0%	16.0%	20.0%	100.0%
	Other, please specify		50.0%		25.0%		25.0%	100.0%
	Refuse					50.0%	50.0%	100.0%
Total		18.6%	12.4%	10.6%	15.0%	23.9%	19.5%	100.0%

How likely would you be to drink recycled water? * How often do you avoid drinking water from the tap because of fears of contamination? Crosstabulation

% within How likely would you be to drink recycled water?

		How often do you avoid drinking water from the tap because of fears of contamination?						Total
		Always	Most of the Time	Sometimes	Rarely	Never	Tap water is not contaminated	
How likely would you be to drink recycled water?	Very likely			13.6%	9.1%	40.9%	36.4%	100.0%
	Somewhat likely	7.9%	10.5%	10.5%	31.6%	28.9%	10.5%	100.0%
	Neither likely nor unlikely	18.2%	4.5%	4.5%	36.4%	18.2%	18.2%	100.0%
	Somewhat unlikely	12.5%	18.8%	12.5%	25.0%	25.0%	6.3%	100.0%
	Very unlikely	5.6%	27.8%	22.2%	11.1%	22.2%	11.1%	100.0%
	Refuse		100.0%					100.0%
Total		8.5%	12.0%	12.0%	23.9%	27.4%	16.2%	100.0%