

The Effect of Tap Water Perception on the Consumption of Bottled Water

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Abstract Over the past 30 years, drinking water has evolved from existing as a household faucet essential to being pumped, bottled and sold as a convenience store commodity. Consumers choose to drink bottled water for a variety of reasons – health, convenience, taste and safety to name a few. Although its growth and popularity represent success for the bottled water industry, the life cycle of bottled water forces a serious impact upon the environment. Despite these issues, and despite that tap water is an equal substitute, consumers continue to increasingly purchase bottled water. The purpose of this study is to investigate the consumer incentive behind purchasing bottled water, namely how it is affected by a negative perception of tap water taste and safety. A survey was designed for and administered to Safeway customers in Contra Costa Country. Using Spearman’s Rank Correlation test, results indicated that there was no relationship between perception of tap water taste and consumption of bottled water. There was a moderate relationship between perception of tap water safety and consumption of bottled water and a strong relationship between the amount of bottled water and tap water one consumes.

Introduction

As living organisms, human beings cannot exist without water (Wilk 2006). Water is a major component of bodily cells, tissues and fluids. It plays a vital role in biological processes such as temperature maintenance and nutrient transportation (Columbia Encyclopedia, 2001-04). Thus, drinking water is a necessity to all human life (Wilk 2006). The recommended daily intake of water for an average person is six to eight ounces per day (Conkling 2005). Even though one can satisfy daily drinking water requirements solely from tap water, in the United States more and more people are reaching for a less environmentally friendly alternative – bottled water.

Although harmful to the environment, many consumers drink bottled water instead of tap water. In 2006, total US bottled water consumption reached 31.2 billion liters (104 liters per person), a nine percent increase from 2005 (Gleick et al. 2002). By 2010, market volume for bottled water is projected to reach 38.6 billion liters (Datamonitor 2006). Consumers choose to drink bottled water for a variety of reasons including brand recognition, portability and health (Wilk 2006). Studies have shown that increased consumption of bottled water is related to a negative consumer perception of tap water quality (Ferrier 2006). Furthermore, other studies have shown that bottled water consumption is related to demographic factors such as race, income or gender (Doria 2006). In one study, African American, Asian and Hispanic groups showed the highest consumption of bottled water, even though on average these groups have a lower income than whites. The results were hypothesized to correlate to the differences in water system quality between rural, suburban and urban areas (Doria 2006).

Although its growth marks success for the bottled water industry, the life cycle of water bottled in disposable plastic negatively affects the environment (Glitz et al. 2007). The environmental impact of bottled water consumption stems from manufacturing, transportation, distribution and disposal of plastic water bottles (Glitz et al. 2007). Each step of the bottled water production process produces greenhouse gases: the transportation of raw materials, the production of Polyethylene (PET) plastic water bottles, the filling of water bottles, and the transportation of the finished product (Ferrier 2006). According to the California Department of Conservation, in 2006 only 50% of PET sales were recycled. Plastic bottles that are not recycled end up in landfills and are incinerated along with the trash. This process further increases the amount of greenhouse gas and toxic fume emissions (Molinaro 2003). Also, potential resources

created from recycled materials are not utilized, and virgin materials must be extracted for processing (Gilitz et al. 2007).

While many people choose to drink bottled water, tap water is still consumed at approximately 236,000 liters per day in the United States (EPA.gov). Factors that influence whether tap water is consumed as drinking water include convenience, health and cost (Ferrier 2006). Tap water is a convenient drinking water option because it is readily available in one's household through public water systems (EPA.Gov 2007). Some consider drinking tap water as a health benefit because of its added fluoride content¹. Tap water is also relatively cheap. Nationwide, bottled water can cost from 500-1000 times as much as tap water, which has an average cost of around two dollars per one thousand gallons (EPA 2004). Despite the availability, potential health benefits, and low cost of tap water, US consumption of bottled water has continued to grow over the past years. While the rate of tap water consumption has been relatively steady in relation to population growth, the rate of bottled water consumption has continued to increase by an additional ten percent each year (EPA.Gov 2007, Datamonitor 2006).

The growth of bottled water consumption may be attributed to negative perceptions of tap water quality regarding its taste and safety. Consumers might drink bottled water because they believe it tastes better than tap water (Ferrier, 2006). However, blind taste tests involving bottled water have not been consistent with this perception (Falahee & MacRae 1995, Wells 2005, Wilk 2006). In a study performed in Britain by Fahalee and McCrae (1995), subjects preferred water with a higher mineral content. In the study, the bottled water had a higher mineral content than tap water (Falahee & MacRae, 1995). Conversely, in a study conducted in Northern Ireland, subjects were unable to detect the difference in flavor between bottled, distilled and tap water (Wells 2005). In various blind taste tests performed by American media, results have shown that subjects prefer tap water over bottled water (Doria 2006).

Another consumer perception is that bottled water is safer than tap water (Ferrier 2006). However, bottled water is not necessarily safer than tap water (Ferrier 2006). As mentioned earlier, tap water is regulated by the Environmental Protection Agency (EPA). Bottled water is regulated by the Food and Drug Administration (FDA), state governments, and the International Bottled Water Association (IBWA) (Capello 2003). The IBWA is a private association and

¹ The EPA regulates fluoride content of tap water, and has a set the drinking water standard of fluoride at 4 mg/L in an effort to protect teeth against the development of dental fluorosis. Dental fluorosis may cause browning or pitting of permanent teeth (EPA.Gov 2007). However ingestion of fluoride in excess or over a long period of time may result in decreased bone density (EPA.Gov 2007).

regulates intrastate bottled water commerce. Interstate bottled water commerce, which composes 60-70% of total US bottled water commerce, is regulated by state governments. State regulators are not required to meet FDA standards (LaMoreaux and Powell 1996). There are currently no regulations regarding recommended shelf life and storage of bottled water, or use of preservatives to prevent microbial growth (Raj 2005). Furthermore, regulatory practices vary between the EPA and the FDA. The EPA requires more frequent testing for bacterial growth in tap water than the FDA does for bottled water. The EPA also requires that testing be performed in certified labs by certified researchers. The FDA does not list this as a requirement (Olson 1999).

Although there are many factors that affect whether one chooses to drink either tap water or bottled water, the purpose of this study is to investigate how the consumer preference for bottled water is affected by a negative perception of tap water taste and safety. My study focuses on two research questions. First, how does the consumer perception of tap water affect consumption of bottled water? Secondly, is there a relationship between the amount of tap water and the amount of bottled water that one consumes?

For my first question, I assume that if a consumer believes bottled water is safer or tastes better than tap water, then they will choose to drink bottled instead of tap water regardless of the risks or benefits of either option. For my second question, I predict that bottled water is consumed as a substitute for tap water and thus an inverse correlation exists between the amount of tap water and the amount of bottled water one consumes. Consumers that drink more tap water will drink less bottled water whereas consumers that drink less tap water will drink more bottled water. Therefore I hypothesize that (1) increased consumption of bottled water is correlated to the consumer perception that a) bottled water is safer than tap water and b) bottled water tastes better than tap water, and that (2) increased consumption of bottled water correlates to a decreased consumption of tap water.

Methods

Surveys were administered to investigate the consumer preference of bottled versus tap water. The study was conducted outside of a Bay Area Safeway supermarket location within Contra Costa County, in the city of Pleasant Hill, CA. Since the population of interest was bottled water consumers, a supermarket was chosen as the data collection site. Contra Costa

County was chosen because its tap water quality meets federal and state standards. Therefore it was assumed that all participants have access to safe tap water.

Data Collection Times The specific data collection times were chosen to account for various shopping habits. Therefore numerous data collection times were chosen to randomize the data collection and include participants with varying schedules (work, school, neither, etc.) Data collection took place during various days of the week and various times of the day. Surveys were conducted on one set weekday and one set weekend day (Wednesday and Saturday), and during the morning, midday and evening (8am-10am 2pm-4pm and 6pm-8pm, respectively). Surveys were collected during the months of February and March 2008.

During data collection, subjects were approached and asked to fill out a self-administered survey upon entrance to the store. The sample was randomized by approaching 1 person per every 10 persons entering the store. Completion of the survey was estimated to take no longer than ten minutes. Once filled out, the participant placed the completed survey into a sealed box. A total of 30 surveys were collected.

Survey Questions Survey questions asked the subject to provide information regarding household drinking water usage and patterns, opinion about tap water safety and taste and incentives for purchasing bottled water. The survey consisted of fifteen questions which were written for the purpose of this study. All administered surveys listed the same questions in the same order. A copy of the survey can be found in Appendix B.

Subject Eligibility All customers entering the supermarket were considered eligible for participation in the study given the following guidelines:

- i) Only one representative per household was asked to complete a survey.
- ii) Store managers, staff and employees were not eligible for participation in the study.
The purpose of this guideline is to avoid pressuring any employee to take the survey, whether from his or her fellow employee, staff member or manager.
- iii) Only persons with the legal capacity to give consent for participation were eligible to participate in the study.
- iv) Only persons over the age of eighteen were eligible to participate in the study.

Based on these requirements, potential subjects were verbally screened prior to participating in the study.

Test Variables Obtained by Study Data used in the analysis were obtained from survey responses. Examples of all main variables studied and corresponding survey questions are given in Table 1.

The variable of ‘tap water safety’ was represented by data from one question only. The variable of ‘tap water taste’ was also represented by data from one question only. Both questions asked whether the participant believed the relevant variable (tap water safety or taste) to be better than, equal to or worse than that (safety or taste) of bottled water.

The variable ‘bottled water consumption’ was represented by data from two separate questions, and subdivided into two separate variables ‘absolute bottled water consumption’ and ‘relative bottled water consumption’.

To calculate the value for ‘absolute bottled water consumption’ the participant was asked to report the overall total amount of bottled water consumed per week. Using the reported information, the value for overall bottled water consumption per person per week was calculated using equation 1 and values from table 2.

The term ‘relative bottled water consumption’ represented relative bottled water consumption in relation to tap water consumption. The question involving the variable ‘relative bottled water consumption’ was broken into three parts: ‘overall’, ‘with access to tap water’ and ‘without access to tap water’. The ‘with access to tap water’ category asked for the relative consumption of bottled water to tap water, in situations where either the participant was at home, or had access to tap water. The ‘without access to tap water’ category asked for the same information, but in situations where the participant was not at home or did not have access to tap water. The ‘overall’ category assumed a combined value of both ‘with’ and ‘without’ access to tap water. For the tests used in this study the ‘overall’ value for ‘relative bottled water consumption’ was used.

Analysis Answers to the survey questions were statistically analyzed (alone or in combination) in order to address the study’s main research questions and objectives. The survey was analyzed using Spearman’s Rank Correlation (SRC) test. SRC was used to test for a correlation between (1) the amount of bottled water consumed and perception of tap water taste and safety and (2) the amount of bottled water consumed and the relative amount of tap water consumed.

For the first hypothesis, SRC was used to test for two correlations between the following factors: 'tap water safety' and 'bottled water consumption', and 'tap water taste' and 'bottled water consumption'. The factors 'tap water safety' and 'tap water taste' served as the independent variables and 'bottled water consumption' served as the dependent variable. For the second hypothesis SRC was used to test for the correlation between 'absolute bottled water consumption (overall)' and 'relative bottled water consumption (overall).' The factor 'absolute bottled water consumption (overall)' served as the independent variable and 'relative bottled water consumption (overall)' served as the dependent variable. Therefore it tested if the reported volume of bottled water consumed per capita per week influenced the relative amount of tap water to bottled water the participant consumed.

Additionally, although not part of the main research questions, a simple linear regression was used to test for a correlation between various demographic variables, bottled water consumption and perception of tap water safety and taste.

Table 1 Main Test Variables and Example of Corresponding Response on Survey

Question on Survey	Latent Variable	Manifest Variable (Possible Survey Responses)
14a	Tap Water Safety	Tap water is safer than bottled water. Tap water and bottled water are equally as safe. Bottled water is safer than tap water.
14b	Tap Water Taste	Tap water tastes better than bottled water. Tap water and bottled water taste the same. Bottled water tastes better than tap water.
10a-10f (Calculated using Equation 1 and Table 3 found in Appendix A)	Absolute Bottled Water Consumption (Overall)	<i>(please indicate how many of each of the following bottle sizes you consume per week)</i> Question presented in grid format. Bottle size options (in ounces): 8,16.9,20,3.8,50.7,128 Number bottles consumed options: none, 3 or less, 4-7, 8-14, 15-21, 22+
12a	Relative Bottled Water Consumption (Overall)	<i>(overall I drink)</i> Only tap water. More tap water than bottled water. Equal amounts of tap water and bottled water. More bottled water than tap water. Only bottled water.
12b	Relative Bottled Water Consumption (With Access to Tap Water)	<i>(at home/in situations where I do have access to tap water, I drink)</i> Only tap water (use own water bottle). More tap water than bottled water. Equal amounts of tap water and bottled water. More bottled water than tap water. Only bottled water.
12c	Relative Bottled Water Consumption (Without Access to Tap Water)	<i>(not at home/in situations where I do not have access to tap water, I drink)</i> Only tap water (use own water bottle). More tap water than bottled water. Equal amounts of tap water and bottled water. More bottled water than tap water. Only bottled water.

Results

Effect of Perception of Tap Water Safety on Bottled Water Consumption To determine how the perception of tap water safety influenced bottled water consumption two separate tests were performed. First, perception of ‘tap water safety’ showed a positive weak correlation with ‘absolute bottled water consumption (overall)’, which did not confirm my hypothesis ($r_s=.152$, $p=.44$, $n=28$). However, perception of ‘tap water safety’ showed a positive moderate correlation with ‘relative bottled water consumption (overall)’ confirming my hypothesis ($r_s=.471$, $p=.01$, $n=28$).

The results indicated that the participants who thought that bottled water was safer than tap water drank more bottled water than the participants who thought that tap water was equally as safe as bottled water. However, none of the participants thought that tap water was safer than bottled water.

Effect of Perception of Tap Water Taste on Bottled Water Consumption Perception of ‘tap water taste’ showed a positive weak correlation with ‘absolute bottled water consumption (overall)’, which did not confirm my hypothesis ($r_s=.121$, $p=.532$, $n=29$). Perception of ‘tap water safety’ also showed a positive weak correlation with ‘relative bottled water consumption (overall)’ which did not confirm my hypothesis ($r_s=.272$, $p=.153$, $n=29$).

The results from this test indicated that the participants who thought that bottled water tastes better than tap water consumed the same amount of bottled water as the participants that thought tap water was either equal in taste or superior in taste to bottled water.

Effect of Bottled Water Consumption on Tap Water Consumption “Relative bottled water consumption’ showed a strong positive correlation with ‘absolute bottled water consumption (overall)’ which supported my hypothesis ($r_s=.651$, $p<.0001$, $n=30$).

This test indicated that the participants who reported the largest absolute volume values of bottled water consumed per day, also indicated they only drank bottled water as their drinking water source. Also, the participants who reported the smallest absolute volume values of bottled water consumed per day also indicated they only drank tap water as their drinking water source.

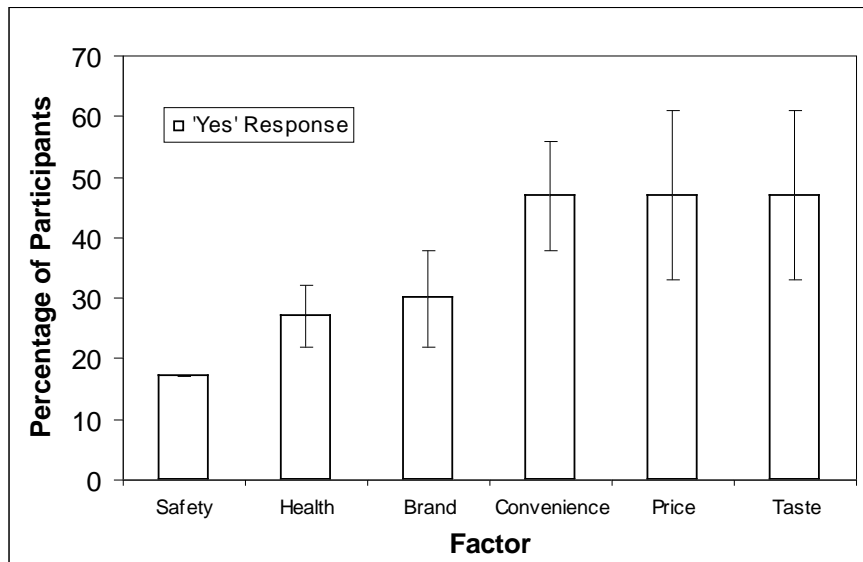
The previous analysis only shows the correlation between ‘overall’ tap and bottled water consumption, as opposed to in situations where the consumer always has access to tap water. However, there is a strong positive correlation between the ‘with access to tap water’ and ‘overall’ relative tap water to bottled water consumption ($r_s=.897$, $p<.0001$, $n=30$).

Table 2 Spearman Rank Correlation Test Coefficients

Variable 1	Variable 2	r_s	Sig. > r_s
Tap Water Safety	Absolute Bottled Water Consumption (Overall)	.152	.441
	Relative Tap Water to Bottled Water Consumption (Overall)	.471	.01
Tap Water Taste Perception	Absolute Bottled Water Consumption (Overall)	.121	.532
	Relative Tap Water to Bottled Water Consumption (Overall)	.272	.153
Relative Tap Water to Bottled Water Consumption (Overall)	Absolute Bottled Water Consumption (Overall)	.651	<.0001
	Relative Tap Water to Bottled Water Consumption (With Access to Tap Water)	.897	<.0001

Other Factors of Interest Other variables, unrelated to main study questions, include factors influencing bottled water consumption (Fig. 1) and the influence of demographic variables on bottled water consumption.

A significant relationship was found between ‘relative bottled water consumption’ and household ‘income’ ($r^2=.4132$, $DF=25$, $n=30$). No other significant findings were found while testing for a relationship between demographics, bottled water consumption and perception of tap water safety and taste.

**Figure 1 Factors Influencing Bottled Water Consumption**

Discussion

The purpose of this study was to examine whether a consumer's perception of tap water safety and taste would influence the amount of bottled water they consume, and if the amount of bottled water they consume would influence the amount of tap water they consume. Overall, my study results concluded that there is a moderate relationship between perception of tap water safety and consumption of bottled water, a weak relationship between perception of tap water taste and consumption of bottled water and a strong relationship between the amount of bottled water and tap water one consumes.

Effect of Perception of Tap Water Safety and Taste on Bottled Water Consumption To test for my first hypothesis (increased consumption of bottled water is correlated to the consumer perception that a) bottled water is safer than tap water and b) bottled water tastes better than tap water) I tested two sets of variables using the same test. Testing 'tap water safety' against 'absolute bottled water consumption' refuted my hypothesis, but testing 'tap water safety' against 'relative bottled water consumption' moderately supported my hypothesis. Testing 'tap water taste' against 'absolute bottled water consumption' and 'relative bottled water consumption' both refuted my hypothesis.

Testing perception values against absolute values gave less significant results than testing against relative values. In the case of tap water safety perception, one test indicated a correlation, while the other did not. Since the two tests produced different results from the perception of tap water taste, it is difficult to pinpoint which variable is the most accurate in predicting correlations. Although the correlation strength of the various tests did not match, the correlations attained by testing 'tap water safety' and 'tap water taste' against 'absolute bottled water consumption' are both weaker than those attained by testing against 'relative bottled water consumption.'

Effect of Bottled Water Consumption on Tap Water Consumption To test for my second hypothesis (increased consumption of bottled water correlates to a decreased consumption of tap water) I only used one set of variables. There was a strong correlation between 'absolute bottled water consumption (overall)' and 'relative water consumption (overall)' which supported my hypothesis. Because I only calculated overall bottled water consumption, I only tested 'absolute bottled water consumption (overall)' against 'relative bottled water consumption (overall)'.

However, in interest to understanding how the correlation relates as to why consumers choose to drink bottled water when tap water is available, I also tested for the correlation between 'relative bottled water consumption (overall)' and 'bottled water consumption (with access to tap water)'. The results of the test concluded that a strong correlation exists between the two factors, indicating that there is a relationship between the overall amount of bottled water one consumes and the amount of bottled water they consume while at home (or in situations where they have access to tap water). Therefore this correlation suggests that a majority of one's bottled water consumption occurs within the household.

Effect of Other Variables on Bottled Water Consumption

Other findings of interest include that when asked which factors influence their decision to purchase bottled water 47% of participants listed taste as a factor while only 17% listed safety (Figure 1). However, when asked for their comparative opinion of tap and bottled water safety and taste none of the participants believed that tap water was safer than bottled water, which diverged from the other findings. Similarly, 46% of participants indicated that they believed bottled water was safer than tap water and 66% indicated that they believed bottled water tasted better than tap water.

The other factors that had the highest percentage of interest included convenience (47%) and price (47%).

Review & Other Studies My results partially support other findings involving perception of tap water safety and taste and its influence on bottled water consumption. Separate studies conducted by Ferrier and Doria have found that there is a relationship between bottled water consumption and perception of tap water quality, including both safety and taste (Ferrier 2006, Doria 2006). While my study did find a relationship concerning the factor of safety, I found no such relationship regarding taste.

In terms of demographic factors, my study only found a relationship between 'relative bottled water consumption (overall)' and 'income', indicating that households with a greater income consumed more bottled water than households with a lower income. Other studies found additional significant relationships between bottled water consumption and demographic factors (such as race and gender) which were not supported by my study.

Study Improvements & Suggested Research Such discrepancies within my own results and in comparison to other studies may have resulted from differences in study design or overlooking other factors that may influence bottled water consumption.

Possible flaws within my questionnaire structure and design may have prevented participants from accurately expressing the quantitative amount of bottled water they consume per week, or the relative amount of tap water they consume in comparison to bottled water. Hence, such ‘guesswork’ included in the data may have offset my own results. Additionally, some participants expressed anxiety when asked to provide their opinion on tap and bottled water safety and taste. Anxiety may have stemmed from perceived pressure to provide the socially ‘correct’ answer. As a result, some participants did not provide answers to some questions, resulting in a reduced n value, and decreased significance.

Also, aside from perception of tap water safety and taste, there may be additional factors that influence bottled water consumption, specifically marketing. As evidenced by its current growth rate, bottled water is a rapidly expanding industry. Such high economic stakes have caused the market to become extremely competitive (Ferrier 2008). Marketing strategies include creating the most appealing packaging for bottled water (e.g. shape of bottle, label), promoting water for a specific purpose (e.g. health, energy, flavor) and advertising water as originating from a distinct ‘destination’ (e.g. Hawaii, France, Iceland) (Zegler 2006). Examining how specific marketing strategies influence a consumer’s decision to drink bottled water would provide further insight into the consumer preference to consume bottled water instead of tap water.

Thus, future suggested research may include both modifying the survey design and examining other factors that influence bottled water consumption. Creating a survey with questions that more accurately address the main research questions and variables of interest may be more insightful, since there are many factors that influence a consumer’s decisions to drink tap water, bottled water or both. A more extensive survey would also benefit from or require a longer time period for participant to complete questionnaire. Completing the questions in an interview setting, rather than a self-administered one, may be more beneficial. Another alternative may be to directly observe the participant’s drinking water consumption while at home. Secondly, a modified survey would also include more detailed questions addressing other possible influencing bottled water consumption factors, such as marketing. Inclusion of other

factors would not rule out perception of tap water quality as a factor of influence, but rather aid in identifying the most dominant factors driving bottled water consumption.

Overall the difficulties I encountered with this study mainly centered on the survey design and administration. Refining the data collection instrument and methods would provide more accurate data resulting in a stronger analysis.

Conclusion

The results of this project provide information on the factors that influence a consumer's decision of whether or not to drink bottled water, namely the perception of tap water quality. My research has found that the consumption of bottled water and tap water are related and that a negative perception of tap water quality drives increased consumption of bottled water. Namely, consumers believe bottled water to be superior to tap water in safety. Since water is essential for life, patterns of drinking water consumption are an area of universal interest. In order to reduce bottled water consumption and its corresponding environmental impact, tap water consumption would need to increase, which would thus involve an improved perception of tap water quality. Although this outcome may seem unlikely due to the overwhelmingly increasing demand and consumption of bottled water, with proper guidance and knowledge, consumers may realize that tap water is a more environmentally friendly and economical alternative to tap water.

Acknowledgements

I thank Shelly Cole, Peter Oboyski, Shannon May and especially Gabrielle Wong-Parodi for their guidance throughout the course of this project. I also thank Safeway supermarkets for permitting me to administer surveys to their customers, and the Office of the Protection for Human Subjects as this project received exemption status (CPHS Protocol #2007-11-47) under 45 CFR 46.101(b) of the Federal Regulations for working with human subjects.

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Appendix A

Equation 1 Individual Total Bottled Water Consumption (C) in Fluid Ounces

$$C=a(8)+b(16.9)+c(20)+d(33.8)+e(50.7)+f(128)$$

when:

Constant value units are given in (fluid ounces per bottle)

Variable unites are given in (bottles)

Table 3 Data Input for Equation 1

Category (On Survey)	None	3 or Less	4-7	8-14	15-21	22+
Input Value (Equation)	0	1	7	14	21	28

Example 1 Example Survey Response Used for Sample Analysis

Variable in Equation	Size of Bottled Water (oz)	Bottles of Bottled Water Consumed in a Week					
		None	3 or Less	4-7	8-14	15-21	22+
a	8	x					
b	16.9		x				
c	20			x			
d	33.8	x					
e	50.7						x
Variable in Equation	Size of Bottled Water (oz)	None	1	2	3	4	5
f	128		x				

Given the values in example 1, equation 1 would assume the following format:

$$C=a(8)+b(16.9)+c(20)+d(33.8)+e(50.7)+f(128)$$

$$C=0(8)+1(16.9)+7(20)+0(33.8)+28(50.7)+1(128)= 1704.3 \text{ ounces}$$

Appendix B: Survey

Drinking Water Consumption Survey

Note: Please be aware that by completing and submitting the following survey, you have provided consent to participate in this research study.

1. What is your sex?

- Female Male

2. What is your ethnicity? (Please check one)

- White (Non Hispanic)
 Asian or Pacific Islander
 American Indian or Alaskan Native
 Hispanic/Latin American
 Black/African American
 Other _____
 Decline to state

3. What is your age?

- 18-24 years
 25-30 years
 31-40 years
 41-50 years
 51-60 years
 Over 60 years

4. What is the highest level of education you have completed?

- Less than 9th grade
 High School
 Some College, no degree
 Technical or Associate Degree
 Bachelor's Degree or more

5. What is your total annual income?

- Under \$20,000
 20,000-\$39,000
 40,000-\$59,000
 60,000-\$79,000
 80,000-\$99,000
 100,000 and over

6. How many persons are in your household? _____

7. Do you drink tap water? Yes No

8. Do you use a system to filter your tap water? Yes No

9. Do you drink bottled water? Yes No

10. Please indicate how many of each of the following bottle sizes you consume per week:
(You may refer to the 'water bottle size guide' if you are unsure of what each size looks like)

	None	3 or less	4-7	8-14	15-21	22 +
a. Half-pint (8.oz.)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b. Half-liter (16.9 oz)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c. 1 Pint, 4oz. (20 oz.)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d. 1 Liter (33.8 oz.)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e. 1.5 Liters (50.7 oz.)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	None	1	2	3	4	5 +
f. 1 Gallon or more	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

11. Please **rank** all applicable factors for purchasing bottled water.
It is not necessary to rank all factors, only those applicable.

Brand
 Convenience
 Health
 Price
 Safety
 Taste
 Other

12. Please complete the statement that best describes your drinking water consumption:

a. Overall, I drink...

- only tap water.
 more tap water than bottled water.
 equal amounts of tap water and bottled water.
 more bottled water than tap water.
 only bottled water.

b. While at home, or in situations where I do have access to tap water, I drink

- only tap water.
 more tap water than bottled water.
 equal amounts of tap water and bottled water.
 more bottled water than tap water.
 only bottled water.

c. While not at home, or in situations where I do not have access to tap water, I drink

- only tap water (use own water bottle)
 more tap water than bottled water.
 equal amounts of tap water and bottled water.
 more bottled water than tap water.
 only bottled water.

13. Please check the statement(s) that best describe where you drink bottled water.

- I do not drink bottled water.
- I drink bottled water at home.
- I drink bottled water in the car.
- I drink bottled water when running errands.
- I drink bottled water when working out/playing a sport.
- I drink bottled water at school/work.

14. Please check the statement that best describes your opinion on the following categories:

a. Drinking Water Safety:

- Tap water is safer than bottled water.
- Tap water and bottled water are equally as safe.
- Bottled water is safer than tap water.

b. Drinking Water Taste:

- Tap water tastes better than bottled water.
- Tap water and bottled water taste the same.
- Bottled water tastes better than tap water.

15. What is your zip code? _____

*****Thank You!!!!*****