



University of Utah

UNDERGRADUATE RESEARCH JOURNAL

**HOW BRANDING INFLUENCES OUR WILLINGNESS TO PAY FOR
NECESSITY PRODUCTS
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HOW BRANDING INFLUENCES OUR WILLINGNESS TO PAY FOR NECESSITY PRODUCTS

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A Senior Honors Thesis Submitted to the Faculty of
The University of Utah
In Partial Fulfillment of the Requirements for the
Honors Degree in Bachelor of Science

In

Marketing

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March 2021
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ABSTRACT

Though marketing has existed in one manner or another for the duration of human history, the field has only seen strong development since the beginning of the 20th century. Marketing is now an inescapable part of everyday life and companies across every industry advertise of to us as potential customers. This development has been indiscriminatory to the nature of the product and necessity products are marketed to consumers in the same manner as every other product. This research has aimed to investigate if some common aspects of marketing, including brand name and distributional availability, will impact a consumer's willingness to pay for a necessity product. This research examined these aspects using bottled water, a product that sells one of the core needs for human survival, water.

Conducted at the University of Utah, the conjoint survey given to students yielded results that indicate that the brand associated with bottle of water significantly impacts a consumer's willingness to pay for the bottle. Other variables measured did not have an impact on willingness to pay, including distributional availability, health consciousness, and environmental consciousness. These results seem to indicate that the brand can play a significant role in the decisions customers make, even for necessity products. Additional research must be done to confirm the exact economic impact that branding can have, and to understand how this may change for other necessity products, but this research highlights the importance of consumers remaining aware of how brands are marketing to them in order to avoid spending unnecessary additional money on products necessary sustaining their modern way of life.

Table of Contents

| | |
|-------------------|----|
| ABSTRACT..... | ii |
| INTRODUCTION..... | 4 |
| METHODOLOGY..... | 16 |
| RESULTS..... | 26 |
| DISCUSSION..... | 30 |
| CONCLUSION..... | 36 |
| REFERENCES..... | 38 |
| APPENDICES..... | 40 |

INTRODUCTION

Though marketing is a relatively new field of study, marketing tactics have permeated lived experience for longer than humans have walked the earth. Peacocks market themselves for reproduction through their beautiful feathery plumes and some plants try to appear poisonous to convey a message of inedibility, marketing themselves against untimely death. Today, marketing stretches far beyond evolutionary techniques of survival as modern capitalism has propelled it into being one of the most important aspects of a successful company. In fact, it has become such a fixture of modern-day life that Jay Walker-Smith, the president of the marketing firm Yankelovich, now estimates that people in metropolitan areas now see up to 5,000 ads each day (Johnson, 2006).

Despite this current trend towards oversaturation, society hasn't always been such a sponge for advertisement. For many years, marketing was regarded as an unnecessary addition to the business model, garnering more costs than profit and hindering natural development. However, over the course of thousands of years and thanks to many brilliant minds, the collective wisdom about marketing has advanced and coalesced. The benefits of marketing are unquestioned in today's world (even Jeff Bezos recently relented by increasing Amazon's marketing spend (Kim, 2019) but the foundational principles used to create modern marketing also present opportunity for abuse. The same approach taken to raise a person's willingness to spend on a new laptop can be used to increase their willingness to overspend on necessities such as food, water, and shelter.

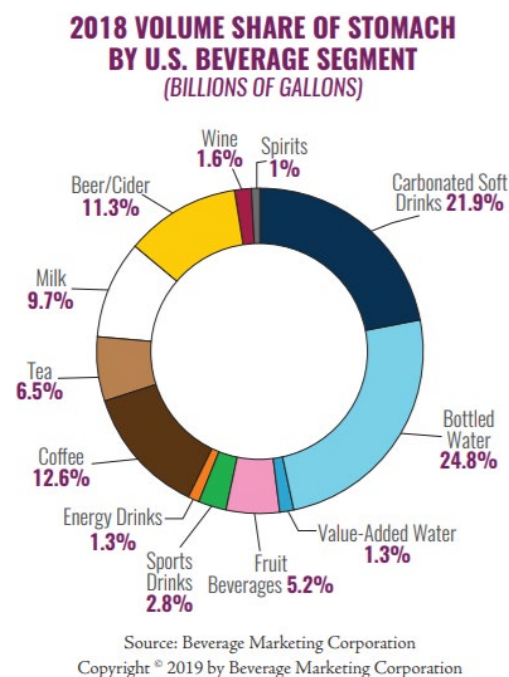
A bull and a swan carry with them different mental images, and those mental images in turn influence how a person thinks about a brand. Though there are a variety of factors at play, Red Bull very well may not have experienced its overwhelming success branded as Red Cricket.

This is all to say that marketing has a heavy impact on the decisions each person makes, and those choices aren't limited to the next soda they'll grab. There is nothing that's off-limits to advertisers. Even water, one of the most critical substances for human survival, hasn't escaped the influential hand of marketing as products like Fiji Water remind people daily that there can be a luxury aspect to the essentials of life. Not even the most essential aspect of human life, oxygen, has escaped modern marketing. It is now being bottled up and sold at a premium (Boost Oxygen, 2020). Outside of substantive needs, the United States military has taken to flashy advertisements about the Marines while promoting large signing bonuses in an effort to attract young people to put their lives on the line. Every corner of life has been permeated by the capitalistic pursuit of profit and the role that marketing has played in this evolution cannot be ignored. By allowing all aspects of life to be profited on, there is danger that society has damaged the intrinsic value these items hold. In some ways, the modern world has become desensitized to when these products are limited or withheld. By creating a persistent view of these items as purchasable products, rather than needs, it has warped the perception of fair pricing for these categories.

This transition away from needs and wants and towards dollar signs inspired my thesis. My goal is to better understand how marketing has affected the core necessities in modern life and to reflect on if the suspected transition towards commodification introduces negative effects. In order to draw stronger conclusions about any effects marketing is having on willingness to pay in these key areas, I chose to focus on a specific product, bottled water. Excluding a few years surrounding the 2008 financial crisis, sales of bottled water have grown each year for nearly five decades (Harfmann, 2019) and in the middle of the 2010s, it overtook soda as the most consumed beverage in America (Radford- Wattlely, 2020). See Figure 1 – Beverage

Volume. This generation-long growth in the industry continues despite the fact that over 90% of American households having access to safe tap water and that the past decade has seen a surge in popularity for companies offering home-filtration devices. In order to draw conclusions about how marketing has influenced this growth, I chose to use a conjoint analysis method by creating a survey that was designed to better understand specifics about an individual customer's willingness to pay for bottled water. The insight I gained from this research has helped drive my conclusions about the commodification of bottled water and allowed me to expand the discussion to other areas of modern life that may be affected in similar ways.

Figure 1 – Beverage Volume



At its heart, marketing is a method of persuasion. Each advertisement serves an attempt to convince the viewer to use whatever product or service is being displayed. Thanks to Aristotle's work in Ancient Greece, we understand the basics of persuasion as ethos, pathos, and logos (Aristotle, 4th century BC). Thousands of years before the concept of modern marketing,

Aristotle's work had uncovered the basic elements of the craft. Aristotle's work with rhetoric helped people better understand the driving forces behind decision making, and the methods that can be used to convince customers to purchase. Deconstructing persuasion into its base elements of appeal, logic, credibility, and emotion pushed the envelope forward to set the stage for future advancements.

For a long period of time, the concept of "Just Price" held marketing in check as an economic tool. Thomas Aquinas championed the concept, "It is altogether sinful to have recourse to deceit in order to sell a thing for more than its just price." (Aquinas, 1486, pg. 2018) For Thomas Aquinas and many in the Catholic church, selling a product for more than the sum of the labor cost was unjust and sinful. Aquinas viewed this concept of profiting as taking advantage of your fellow man, and the influence the opinion of the church held at that point ensured the efficacy of his statement. This attitude towards profit contributed to a lack of interest in marketing for much of the middle ages. Because of Aquinas's view that a product's price should directly reflect the amount of labor expended, the need for brand recognition and advertising was largely irrelevant during this time. These methods of product differentiation were unnecessary extra costs, and without a company being truly profit driven, the mechanisms aren't needed.

Adam Smith's work in the 1700's helped establish much of the economic framework necessary for the use of marketing to take hold. "Wages, profit, and rent are the three original sources of all revenue as well as of all exchangeable value." (Smith, 1776, pg. 40) Here Smith establishes the modern framework for profit and explores the concept of a product being worth more than the sum of the labor. When advertising, the hope is to generate a return larger than the expenditure, directly correlated to profit. Establishing the economic norm to strive for profit

enabled the later explosion of marketing techniques. “When the quantity of any commodity which is brought to market falls short of the effectual demand... some of them will be willing to give more.” (Smith, 1776, 46) Smith continues by establishing a concept of supply and demand where when supply cannot answer the demand there is a natural hike in price to reduce the potential purchases to a more even point. This way of thinking becomes important to help understand the power of marketing. Rather than attempting to decrease supply, the craft represented an opportunity to increase demand beyond the supply created.

It wasn't until the 1900's that marketing truly took its rightful place among business strategies, as shifting paradigms in business led to innovation and progress across various industries. Robert Bartels is one of the largest cultivators of marketing history, and in his “The History of Marketing Thought” he breaks this century into ten-year segments. This segmentation includes the periods from 1900-1910, “The Period of Discovery” and from 1960-1970, “The Period of Differentiation.” (Bartels, 1988) His choice to break the century down into each decade represents how quickly the field has progressed. In fact, Bartels cites 1902 as the first-year marketing was taught at an American institution and deems “Report of the Industrial Commission on the Distribution of Farm Products” as the first book of general marketing (Bartels, 1951).

It didn't take long for people to realize the widespread applicability of various marketing techniques. Edward Bernays was one of the first public relations experts, publishing his first book, “Crystalizing Public Opinion,” on the topic in 1923. This book sparked controversy by using the phrase “engineering of consent” to describe what his line of work does. The phrase carries with it some nefarious connotations, the idea that a product could be sold by changing how people think of it opens the door for exploitation. Bernays contributed to many noteworthy

causes, helping to promote the first NAACP convention without eliciting violence, and championing the benefits of adding fluoride to the American public's water supply, but also spearheaded much more detrimental campaigns. He was largely responsible for the social acceptance of women smoking in public and helped encourage a push to sell beer in grocery stores after prohibition, labeling it a drink of moderation. Bernays was able to realize, at a time when few did, the power of the public's perception of a brand or norm.

The 1960's brought forth an era of separation and specialization, as well as the first glimpses of data driven quantitative analysis. Consumer behavior models began to gain traction helping companies better identify and choose their target market. The Period of Differentiation also saw marketing discover the power of going against the grain. For many years, advertisements were fact-based informative pieces designed to best express a product's features, but little else. Volkswagen bucked this trend with their "Think Small" ad campaign, offering a promotion that said little about the automobile's benefits, but featured real photos of the car, while most advertisements prior had been airbrushed artist renditions (Bell, 2016) The ad campaign also promoted the car's small frame, starkly contrasting the live-big mentality that permeated the times.

The field of marketing continues to progress through today, where members of the community commit to more nuanced research than seen in years past. This includes work like the research being done showing "strong support for the relationship between color and brand personality, driven by color's referential meaning." (Labrecque & Milne, 2011, pg. 724) Though the impact of color on consumer choice has long been studied, people are starting to better understand how those colors impact specific things like a brand's perception. Social media has also created a large new avenue for those interested in researching marketing to

pursue, with very recent studies showing that “social media marketing efforts have a significant positive impact on brand equity and on the two main dimensions of brand equity: brand awareness and brand image.” (Godey et al., 2016) Not only are millennials using social media at astonishing rates, but their spending also reflects that heavy usage. Modern day studies tend to focus on very specific marketing strategies and efforts now attempt to hone a craft that’s had one hundred years of academic rigor applied to it.

Despite the field’s dramatic impact from a financial standpoint, marketing remains relatively new, having only experienced a surge in popularity in the last hundred years. Even in more recent years, this aspect of business has seen its trajectory take off as technology has increased the ease of personal marketing efforts. However, these efforts are yet to be fully understand and could present underlying issues when used to promote certain products. Marketing now plays a role in most every purchase decision a person must make, from the meal they’ll have for lunch to the life insurance policy they’ll purchase, their options and choices are swayed by the messages they see and hear about a product.

Diamonds stand as a gleaming example of the power of marketing. The concept of a bride receiving a ring from the groom has been traced back to Ancient Rome, where they would receive a ring of gold to wear in public, along with an iron ring to be worn when at home. Diamonds were thought to first enter the equation in the 1400s when an Archduke Maximilian of Austria presented Mary of Burgundy with a diamond ring. (Hess, 2007) These rings began as status symbols for wealthy individuals and eventually expanded to an engagement option for most people across classes. Until the first world war, the diamond engagement ring found a modicum of success in America, but after Americans were forced to deal with WWI and the

Great Depression in quick succession, the market for diamonds was largely destroyed. Before the second World War, only 10% of engagement rings were made with diamonds. This all changed shortly after WWII when Frances Gerety coined the slogan “A Diamond Is Forever.” (Francis-Tan & Mialon, 2015) At the time even she didn’t think it was her best work, but thanks to help from De Beers, the slogan took off.

By the 1940s, De Beers had been fighting for decades to maintain a superficial scarcity of diamonds and had effectively cornered the diamond market by maintaining control of most places where diamonds could be mined, allegedly making use of illegal and immoral tactics to do so (Rosen, 2020). This allowed them to slowly release diamonds to the general public, creating a market that behaved as Adam Smith predicted. Diamonds maintained their high value because of the façade of demand De Beers was able to create, keeping some consumer’s willingness to pay at a point high enough to earn desirable amounts of profit. However, this restriction on supply wasn’t enough to truly create a successful product, and to do so, the diamond needed to capture the attention of the American public.

Thanks to Gerety and “A diamond Is Forever,” the American public’s attention had just been captured. The slogan helped manipulate public opinion into thinking that buying a diamond ring for an engagement was the accepted norm and by 1951, eight out of every 10 American engagements featured a diamond ring. With the help of other successful marketing campaigns in the years following, and a supply of diamonds that’s continued to be artificially suppressed, that number has never trailed off, remaining constant at about 80% for over a half-century (Sullivan, 2014).

The diamond is an excellent example of how influential marketing can be, completely flipping the market’s opinion on diamond engagements rings in just a few years, but it doesn’t

serve as a strong example of the danger of powerful marketing. Diamonds are at the end of the day a luxury good and not being able to purchase a large diamond may be a blow to the ego, but it won't directly impact your health and wellbeing.

The same cannot be said of insulin. Insulin is a hormone created in the pancreas, vital for human life. The hormone helps regulate blood sugar levels in the body which is incredibly important because if those levels become too low or too high, a patient can die. About 10% of the American public has diabetes, 5% of whom have Type 1 diabetes. Type 1 diabetes is unique in the fact that the body cannot produce any natural insulin. This means, in order to maintain a healthy lifestyle, and for many, in order to survive, they must purchase insulin to use. When a trio of inventors discovered insulin in 1923, the patent was sold to the University of Toronto for \$1. Frederick Banting, one of the three discoverers refused to even put his name on the patent because of ethical concerns about profiting from such a life-changing discovery (Belluz, 2019). At its beginning, insulin was seen as a life changing medicine that should be free for the masses to use and prosper from.

For most of the last century, Banting's hesitation to profit from the drug rang true. In 1996, a vial of insulin analog cost \$24. Roughly estimating, looking at inflation rates and relative buying power, \$24 in 1996 is equivalent to \$39 today (Inflation rate between 1996-2021: Inflation calculator). This quickly changed and by 2005, analog insulin cost about \$60 per vial. In 2012, the price had reached about \$120 (Hirsch, 2016). Today, a vial of Lantus (a long-acting type of insulin) goes for around \$300. The United States currently makes up about 15% of the world's insulin consumption but represents nearly 50% of the pharmaceutical insulin revenue (Luo & Kesselheim, 2015). A study of insulin trends described "a near-exponential upward trend in Medicaid payments on a per-unit basis." The study further goes on to identify a "lack of price

competition in the United States for this class of medications.” Despite the best intentions of its discoverers, insulin in America has become a drug many need yet few can afford, thanks in large part to the principles of marketing.

It is generally established that supply and demand function well together and Adam Smith created the theory of the invisible hand to help explain the equilibrium the two reach. The two are forced to a point where the market sustains itself, prices rising and falling as customers exercise their right to spend their dollars wherever they choose. These normal confines of willingness to pay apply to most products, as there are very few things humans cannot live without. Insulin serves as an example of where this concept fails. It is these “necessity” products that humans have found essential to life that escape free market rationale. Insulin cannot be governed by a willingness to pay model because the upper bound stretches far beyond that of a normal product. Insulin’s demand is virtually inelastic, no matter the price the same number of people will depend upon the product for survival. People will be willing to pay whatever is necessary to obtain insulin because it’s vital for continued life. In the past 20 years large pharmaceutical companies have realized this and buoyed by the fact that only three companies control the entirety of the US insulin market, prices have skyrocketed. This isn’t the case in other countries, often because governments put a cap on insulin costs, directly negotiating with pharmaceutical companies. Without the consent of the government, these companies cannot sell in the country at all, leading to largely reduced costs. China, for example, represents 25% of the world’s insulin users, but only 4% of sales. America’s reliance on the free market, acceptance of profit, and continued willingness to pay have contributed to a marketing effort effecting the lives of millions of US citizens.

The history of bottled water finds a middle ground between unnecessary luxury and fundamental survival. Nearly as soon as glass bottles became cheap enough to be mass produced people started selling water in them. The very first of these sellers bottled water from natural mineral springs and touted various health benefits, such as the ability to cure a fever (Moss, 2018). While it began as a specialty product, it soon evolved to be an alternative for people worried about the quality of their municipal water supply. At the time, this was a legitimate concern, and the industry grew because of it, but by the early 1900s the idea of chlorinating the water for safety had taken hold and municipal water became a much safer alternative. This led to an overall decline in the industry that wouldn't be revitalized until the 1970s. Polyethylene terephthalate's invention early in the decade allowed companies to cut the cost of bottled water by packaging it in plastic, but it wasn't until Perrier revitalized a push for market share in US market in the late 1970s that the industry began its 50 years of growth. They were one of the first companies in the industry and used the tagline "Earth's First Soft Drink" to position itself as a prestigious alternative to traditional tap water (Hurly, 2019). This positioning against tap water has remained a trend in the decades following, as companies have fought to convince customers the benefits of their packaged water outweigh the negligibly priced tap water they can consume at home.

Today's bottled water industry includes companies that range from store brands, including Costco's Kirkland and Walmart's Great Value, to high-quality brands such as Evian and Voss. Some companies have begun releasing waters that vary in alkaline content, purporting additional health benefits along the way, while others have marketed their products in a more traditional sense, including the brand LIFEWTR which has featured commercials on television and carries the slogan "Let Creativity Flow." The idea that some bottled water carries status has

also made its way into popular culture. In 2019 the Golden Globes featured a Fiji Water brand ambassador handing out the water to celebrities, and in a 2017 song popular rapper Drake compared his history of drinking tap water to his current habits of drinking Voss to highlight his immense success.

Bottled water doesn't create quite the same breakdown in supply and demand as insulin does, but it is certainly not a product people can live without, like diamonds. My thesis will further explore the impact that marketing has had on consumer perceptions of bottled water. I explore the following research questions:

- Are customers willing to pay more for bottled water depending on the brand associated with it?
- Are customers willing to pay more for bottled water they can find anywhere, or brands that are only selectively available?
- Do factors about the individual customer affect their willingness to pay for water?

METHODOLOGY

In order to better understand how marketing impacts global consumer willingness to pay for necessity products, I narrowed my focus to an individual example of where this might be happening. This led me to water, a great example of something humans need in order to survive that was also being sold in forms far more expensive than that available publicly. I created and distributed a survey asking respondents about their preferences for water and then analyzed the data to draw conclusions about how marketing may be affecting consumer willingness to pay for a necessity product. This allowed me to support my conclusions about the impact marketing has had and further explore what the ramifications may be moving forward.

Before I could draw any conclusions, I needed to create a survey that would give me relevant primary data. To create a survey that would most accurately identify willingness to pay, I chose to use the conjoint analysis method. A conjoint analysis is a marketing research method used to understand a customer's willingness to pay for different products by breaking them down into identifiable traits known as attributes. For example, the attributes for a smartphone could be price, brand, size of the screen, touchpad responsiveness, RAM capacity, and so forth. These attributes are then broken into levels, each being a different possibility for an attribute. Example levels for the brand attribute would be Apple, Google, and Samsung. These studies can be executed in various ways, including getting customers to rate product combinations, or through a series of comparisons of two products.

These methods are used partly because it is very difficult for people to self-identify their willingness to pay for an individual attribute, especially in a vacuum. When asked how much a customer would pay for a gallon of milk, they might respond "\$1.50." However, this is rarely the true value – and can be proved quite easily. When directly asked, most customers will also be willing to pay \$1.51, then \$1.52 and so forth. Using conjoint analysis eliminates this tendency

because it forces respondents to evaluate multiple products simultaneously with defined differences. Over a series of questions, an accurate understanding of an individual's preferences can be determined. Based on a person's choices, a mathematical model of partworth utilities can be created. A partworth utility is a number that represents the value a single attribute's level has to a consumer, relative to other levels of that attribute included in the survey, and relative to the other attributes and other levels investigated. When price is used as an attribute, it is also possible to determine the economic value of each partworth by comparing the numbers of two pricing level's partworths. You can ascertain how much the economic value of a partworth is for that customer by comparing the change between dollars and partworths. For instance, if \$4 has a partworth of 3, and \$5 has a partworth of 2, it can be determined $[(5-4) \div (3-2)]$ that for that customer, each part worth is worth \$1. This concept helps companies understand not only understand customer's willingness to pay for products featuring different attributes, but the underlying value elasticity for each attribute.

In order to use the conjoint methodology to create my survey, I needed to break down the influence of marketing into measurable features. To do so, I chose to investigate the relationship between three marketing tactics: price elasticity (and specifically the elasticity of necessity products), the value of consumer brands, and the role distributional breadth plays in consumer purchasing decisions.

It is generally understood that luxury products, and other "wants" are more price elastic than necessity goods. In other words, consumers are willing to spend less on their "wants" as compared to their "needs." This can be seen on an international scale when investigating different country's willingness to pay for crude oil. Crude oil is essentially a necessity product in the modern world, facilitating the production and distribution of most other products. It was

found that country's purchasing of crude oil is relatively inelastic, or that most countries will continue to buy nearly the same amount of crude oil regardless of the current price. I wanted to investigate if this translates to the consumable water market. I measured price elasticity using price as an attribute. My levels were \$1, \$1.25, and \$1.50. These prices were chosen after surveying the cost of bottled water at various retail locations in the area surrounding the University. At each location, the price of the bottle was recorded, along with the brand. These were then averaged within brand groups to help provide better representation for the cost of bottled water. The majority of the prices fell within the \$1 = \$1.50 range. Including price allowed me to gain insight into how much customers were willing to pay, and how dramatically other factors influenced this willingness to pay.

It is well established that a company's brand is critical to their success as a company. There have even been attempts to quantify the value of branding. Forbes lists the most valuable brands each year and currently estimates Apple's brand to be worth over \$200 billion. The understanding fades as we narrow in on a more individualized basis. I wanted to better understand if specific brands influence customer's purchasing decisions on a daily basis. To do so, I used brand as an attribute. I broke brand down to four levels, using Municipal, Store, National, and International to substitute the varying types of brands available for sale. The levels for brand were chosen after observing the price and brand of bottled water at retail locations in the region surrounding the University. Many stores had their own brands, including Costco's Kirkland brand and Walmart's Great Value brand. They also sold national brands such as Arrowhead and Dasani, along with international brands such as Fiji Water and Voss. The municipal brand was included to represent municipal tap water, readily available across the

country. Prior to taking the survey, these brands were explained to respondents as seen below in Exhibit 1 - Brand.

Exhibit 1 -Brand

BRAND is broken down into municipal, store, national, and international. The **municipal brand** is packaged tap water from a local municipality, such as Salt Lake City. **Store brands** are store-specific, brands such as Kirkland (the store brand for Costco) and Great-Value (the store brand for Walmart). **National brands** include labels such as Dasani, Aquafina, and Arrowhead. **International brands** include Fiji Water, Evian, and Voss.

Luxury versions of products can be found across most every industry, ranging from incredibly nice cars to better tasting cheese, and from higher quality fabrics to one-of-a-kind experiences. Part of the foundational aspect of offering luxury goods is a superior quality/experience compared to what you're able to obtain on a normal basis. However, the exclusive aspect that's associated with most luxury items hasn't been explored as much. I wanted to better understand if the exclusive nature of some bottled water products increases a customer's willingness to spend, as opposed to the quality of the water itself. I used perceived distributional availability as an attribute to measure this and broke the levels down to Broadly Available, Selectively Available and Exclusively Available. Prior to taking the survey, distribution was explained to respondents as seen below in Exhibit 2 - Availability.

Exhibit 2 – Availability

PERCEIVED AVAILABILITY is broken down to broadly available, selectively available, and exclusively available. **Broadly available** indicates it can be purchased anywhere, at virtually all convenience, grocery, drug and discount chains and stores. **Selectively available** indicates only select retailers are permitted to carry the brand, for example, only Kroger and Giant Eagle grocery stores, rather than all grocery chains. **Exclusively available** indicates an exclusive partnership between the brand and just one retailer, for example when a brand is available exclusively at Target rather than at any other type of discount or even grocery store.

After breaking down marketing into measurable variables, my conjoint had three attributes, with varying numbers of levels: Price, \$1, \$1.25, or \$1.50; Brand, municipal, store, national, or international; and Perceived Availability, broadly available, selectively available, and exclusively available. This creates 36 options for a product, one example being a \$1 municipal brand water bottle broadly available. It is not reasonable to expect a survey respondent to choose preferences for 36 products and so to reduce the number of product possibilities shown to each respondent I used a marketing Excel Design of Experiments add-in to mathematically reduce the number of potential products to a manageable 12. This is done by recognizing there are large amounts of overlap in product attributes, so many of them can be eliminated without losing the integrity of the data collected. This work is highlighted below in Figure 2 – Conjoint Builder.

Figure 2 – Conjoint Builder

| <i>Experimental Design Builder</i> | | | | | | |
|------------------------------------|-------------------|--------|-------------------------|-------------|-------------|-------------|
| INPUT PARAMETERS | <i>Parameters</i> | | <i>Suggested Design</i> | | | |
| | Attribute | Levels | Profile | Attribute 1 | Attribute 2 | Attribute 3 |
| | 1 | 3 | (1) | 1 | 1 | 3 |
| | 2 | 4 | (2) | 1 | 2 | 2 |
| | 3 | 3 | (3) | 3 | 1 | 2 |
| | 4 | | (4) | 2 | 4 | 2 |
| | 5 | | (5) | 3 | 2 | 3 |
| | 6 | | (6) | 3 | 3 | 2 |
| | | | (7) | 3 | 4 | 1 |
| | | | (8) | 1 | 4 | 3 |
| | | | (9) | 2 | 2 | 1 |
| | | | (10) | 2 | 3 | 3 |
| | | | (11) | 1 | 3 | 1 |
| | | | (12) | 2 | 1 | 1 |

I also hoped to gain some insight into how willingness to pay might be influenced by external factors. I wanted to understand if there are some groups of people who are more willing to buy bottled water than others. To ascertain this information, I asked two sets of questions, both designed as perceptual scales to represent respondent preferences more accurately. One scale focused on the health consciousness of respondents, and the other focused on the respondent's environmental activism. I hypothesized that respondents who were passionate about the environment would drink less high-priced, exclusively distributed, and high brand status bottled water, as they would be more concerned about auxiliary negatives the industry has, including water and plastic waste. I also hypothesized that respondents who were passionate about their health would drink more bottled water, as they would be more likely to select it as an alternative to soda and other canned beverages when given the opportunity. We also included a

question about gender on the survey to help us understand if it played a role in consumer preferences.

I collected data from a group of University of Utah students, all of whom were currently taking MKTG 3010 at the David Eccles School of Business. As part of their course requirements, these students participate in Out Of Class Participation (OOC) events that involved taking online surveys that other University of Utah faculty and students had created to support their academic research. These students were able to anonymously access the survey online in a place most convenient for them and were also informed that they could choose not to take the survey, or stop at any time during, without any detrimental effect on their grade. It is important to note that this may limit the scope of the findings, as most of these students are in the 18–25-year-old age group and varying generations may have different understandings of brands and may have different levels of value for various attributes. Prior to fielding the study, the University of Utah IRB approved the research for human subject safety.

The survey was created using the Qualtrics online platform. As required by the University's IRB human subjects protection process, it began by explaining to the students that they would not face any negative consequences if they did not take the survey or stopped partway through. This was done to prevent any students uncomfortable with the topic from feeling forced to provide responses. After cautioning respondents as such, the survey provided baseline information to help ensure the respondent's understood what was being asked of them. The survey explains that they are being questioned about their preferences for bottled water and then breaks down each attribute and their levels, to ensure that respondents understand the various levels they're being asked to pick from.

After reading through the introductory information, respondents completed the conjoint portion of the survey. They were individually and randomly presented 12 questions asking about their preference for a specific combination of attribute levels. These questions can be viewed in Appendix 1 - Survey. Their answers were given on a 7-point Likert scale, ranging from “Strongly Dislike” through “Strongly Like.” After answering these conjoint analysis questions, they were then asked the string of questions about their personal preferences. Both the environmental and health questions were presented a 7-point Likert scale and included questions such as “Please indicate the extent to which you participate in events organized by ecological groups” and “I’m very self-conscious about my health.” The survey concluded by asking them about what gender they primarily identify with, before wrapping up by thanking them for their time.

The results were analyzed using a combination of software’s, including Microsoft Excel - using the Analysis ToolPak add-in for conjoint analysis - and IBM SPSS Statistics. After downloading the data from Qualtrics into an Excel compatible .csv file, I filtered out poor respondent data. This included responses who did not answer all 12 conjoint questions, and those that answered the questions uniformly (as an example, claiming “Strongly Like” for all 12 conjoint questions). Any surveys that took less than a minute were also filtered out, with the assumption that these respondents would not have had the time to accurately provide their thoughts and had simply sped through the questions. After the data were filtered, there were 134 responses in the final cleaned data set.

To determine the partworth utilities for the responses, a regression was run on the conjoint questions. Using the base case of a \$1.50 internationally branded bottle of water that was

distributed exclusively, a regression was run on the conjoint questions to determine the partworth utilities for the responses. See Table 1 - Results.

Table 1 – Results

| Regression Statistics | | Attribute | Coefficient | P-Value |
|------------------------------|---------------|----------------------|--------------------|----------------|
| Adjusted R Square | 0.114483967 | Intercept | | |
| Observations | 1608 | \$1.50, Intl., Excl. | 4.05989827 | 0.000 |
| ANOVA - F | 30.68014899 | Brand | | |
| ANOVA - F Sig. | 4.69797E-40 | Municipal | -0.447761194 | 0.000 |
| Base Price | \$1.50 | Store | -0.335820896 | 0.000 |
| Base Brand | International | National | -0.135832034 | 0.148 |
| Base Distr. | Exclusively | Distribution | | |
| | | Broadly | 0.088464394 | 0.293 |
| | | Selectively | -0.012033118 | 0.886 |
| | | Price | | |
| | | \$ 1.00 | 1.133333333 | 0.000 |
| | | \$ 1.25 | 0.610540581 | 0.000 |

To determine the impact that our respondents' personal preferences had on their responses, the statistical software SPSS was used. The work began by using factor analysis to group the items for each of the two antecedent constructs (health consciousness and environmental consciousness) into statistically similar groups. The environment item group yielded a single factor result with all of the questions loading statistically significantly onto that factor (>0.5). The health item set began with 11 questions, but after running the analysis, not all of the questions were statistically significant. After removing questions that were not significant, the health item set contained 7 questions, all loading significantly onto a single factor. After factoring the questions, Cronbach's Alpha was used to ensure statistical validity and both variables achieved an alpha above 0.7, indicating all the reliability of the measures. See

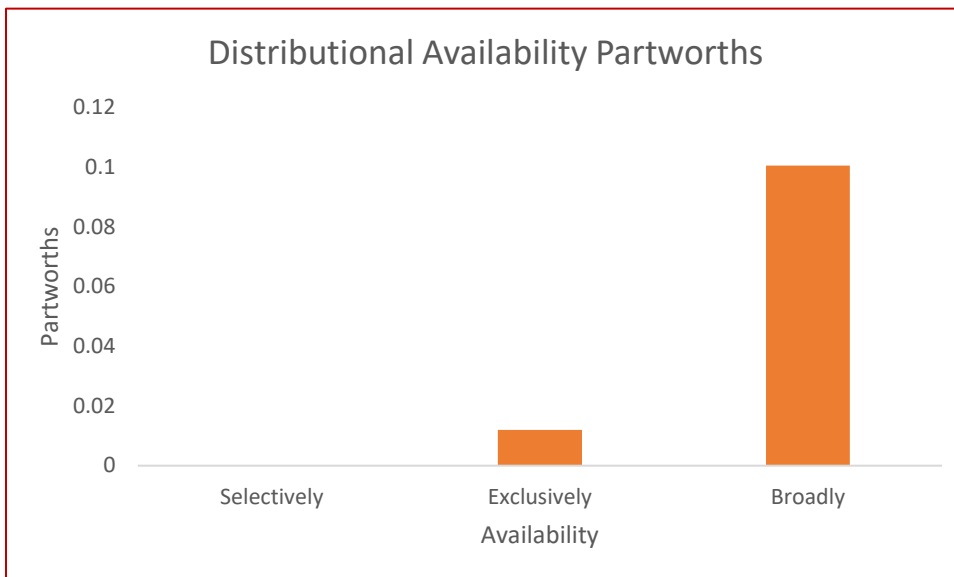
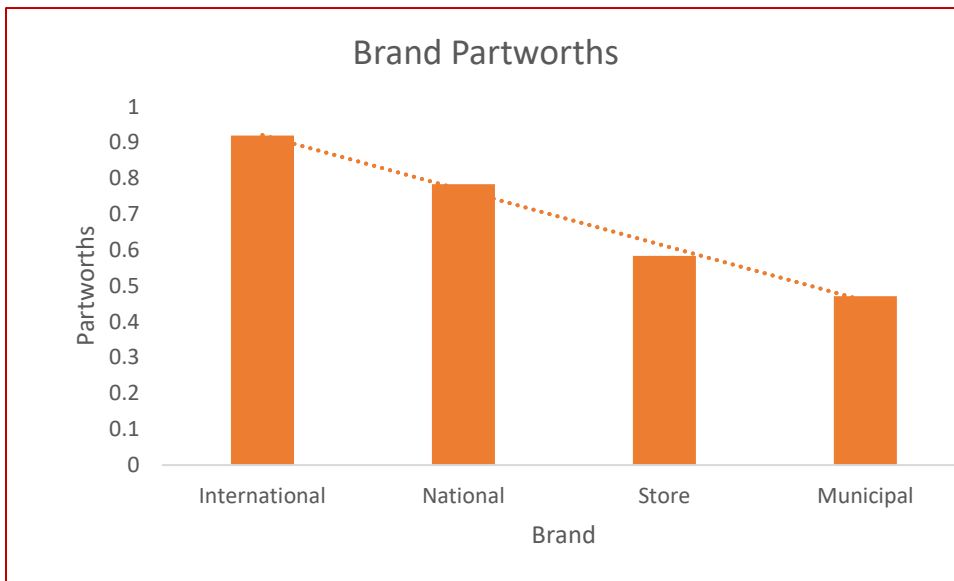
Appendix 2 – Environmental Consciousness Variable Formation and Appendix 3 – Health Consciousness Variable Formation for details on these statistics.

After confirming the reliability and validity of the responses, a regression was run for each of the levels for each of the attributes outside of the base variables. None of the regression equations were statistically significant for the antecedent variables of environmental consciousness, health consciousness, or gender identity. The F tests did not yield results of $P < 0.05$, meaning the regression evaluations were not significant. Furthermore, the adjusted R-squared for the results was frequently less than 1%, indicating that the results represented less than 1% of the variability in the data. See Appendix 4 – Regression Variable Formation for these results.

RESULTS

The results of the conjoint analysis provided valuable insight into customer's perceptions of various bottled water products. As was expected, the price of the water was the most influential of the attributes. As seen in figure 3, the \$1 level was worth 1.13 more partworths than the \$1.50 level, and the \$1.25 was worth .61 partworths more. It is completely reasonable to expect respondents to be less interested in the bottled water that costs more. The distributional availability was not significant and had no effect on the data. This is evidenced by the marginal differences between the attribute's levels. Broadly available was only 0.08 partworths higher than exclusively available. Selectively available performed just worse than exclusive, resulting in 0.01 fewer partworths. The results also indicated that the brand of the bottled water influenced customer perceptions of the product. The municipal brand was valued at 0.45 partworths less than the international brand, and the store brand was valued at 0.34 partworths less. The national brand was 0.14 partworths less than the international brand. As brands trend towards being more prestigious – international – they carry higher partworths. The resulting partworths are graphed below in Figure Three - Partworths.

Figure 3 – Partworths





In order to determine the actual price difference each partworth represents, it's imperative that the conjoint analysis include price as an attribute. By doing so, this allows us to compare the partworth utilities of two different price points, providing insight into how much economic value a single partworth has. With price included as an attribute in this survey, I was able to determine the economic value of each partworth by comparing the utility of \$1 to that of \$1.50. With a difference of 1.1333 partworths, each \$1 is worth 2.2666 partworths. Put another way, every 10-cent increase in price leads to a 0.23 partworth decrease in the value of the offering. This pricing structure allows us to determine the economic value of the partworths for other attributes in the survey.

With broad availability garnering an additional 0.08 partworths compared to exclusive availability, we are able to determine the change in distributional availability to be worth about four cents. Even if this data was statistically significant, it had a minimal impact on consumer willingness to pay. The same cannot be said about brand, as the 0.45 partworth gap between

municipal and international branding is worth between 19 and 20 cents. Even the difference between the national brand and the international brand is about 6 cents.

The survey respondents also gave us insight into their ecological and health preferences, but neither variables generated statistically significant insight. It was also determined that gender did not play a role in the answers our respondents would provide. If this survey were to be distributed again, this is an area where further focus could be useful. Determining if outside factors will influence a customer's perception of bottled water can be incredibly insightful when trying to understand how marketing has been impacting the field, and what attributes most impact customer decisions. Through the use of factor analysis, I was able to determine that some of the questions don't yield the same results as others but aren't important enough to create their own factor. These questions should either be removed from the dataset, or additional questions should be added to strengthen the factor. These questions will also benefit from a larger sample size, which would improve confidence in the conclusions drawn from the dataset.

DISCUSSION

The results from the conjoint analysis indicate that bottled water branding plays a significant role in customer willingness to pay for the product. Price remains the driving factor for customer decisions, but in areas where prices are comparable, the difference between brands appears to be an important driver. International brands tend to be associated with higher-priced bottled water, including those referenced in the survey, Fiji, Evian, and Voss. Municipal brands associated with local tap water suffer from this lack of association. This is despite evidence suggesting tap water's flavor profile and preferability is not dissimilar to that of bottled water (Teillet et al., 2010). It seems as though these associations will drive consumers to desire these higher priced alternatives. At first glance 20-cents may seem like a small dollar value, but the gap becomes more significant when the cost of the product is considered. If a municipal brand were competing in a vacuum against an international brand, the international brand could increase their prices nearly 20-cents higher than the municipal brand without losing customer interest. At the cost of \$1 per bottle, that's 20% of the purchase price. This advantage can play a significant role in the profitability of the firm and come at the cost of the consumer. They may feel urged to spend an additional 20% for the international version of a product that is unable to better achieve the primary goal of the purchase, hydration.

It is worth noting that these results seem to follow a linear decline over the price range that was presented to respondents. The linearity of this decline indicates that the prices used in the survey were within the range of prices where consumer willingness to pay is maintained. The prices presented to respondents were determined by performing field research that explored the cost of bottled water at retail locations surrounding Salt Lake. This research ensured that the prices presented to respondents were relevant to the current prices they would be confronted with when making a real purchasing decision. This further supports the survey's results as it is likely

that the corporations selling bottled water are aware of the range of prices customers are willing to pay and price their products according.

While it was clear that water's branding plays a role in consumer willingness to pay, the lack of influence distributional availability played may seem antithesis to this conclusion. It was in fact, the opposite of my hypothesis made before the experiment. Many products that have strong brand recognition also thrive off of the increase in demand that exclusivity seems to bring. Customers know that the iPhone will be difficult to get for months after its release and often times will wait in lines for hours or days to be some of the first people to get them. Streetwear brands like Supreme have developed cult followings behind their ability to continually manage supply to keep it well below the demand for their product. Each year new versions of severely limited run spirits resell for thousands of dollars on the open market. Yet despite a litany of products that benefit from shortages in supply, the data suggests that this is not the case for water, and there may even be negative implications to withholding bottled water to select locations or times.

I believe that this is an indication that consumers are aware of the importance of water, but still enjoy the prestige that can be associated with stronger brand names. Resistance to increasing willingness to pay for a limited version of the product indicates that consumers are aware that water is a necessity and the idea of withholding the product seems counterproductive to consumers. Despite this awareness, branding has still been able to increase consumer willingness to pay.

Before exploring what the implications are for this survey outside of strictly bottled water, it is important to note some of the limitations of the sample. The overall sample size – 134 respondents – is relatively small. If a similar study were to be performed to further explore the

influence of brand image on bottled water, a larger sample size would be beneficial. The regional homogeneity of the responses is also a factor here. All respondents were University of Utah students, all of whom live in Utah for at least part of the year. This state is home to a large number of outdoor activities and students largely interested in the outdoors may have more need for bottled water or may be more prone to turn to alternatives like Hydro flasks. A more geographically diverse sample size can help ensure that any such biases don't occur. Finally, the sample fully consisted of college students, the majority of whom are between the ages of 18 and 22. This age group may have a different perspective in regard to bottled water than previous generations, as a growing state of health consciousness may make students and younger generations more prone to selecting bottled water. The strongest sample would include respondents from all age groups to ensure any trends that may impact responses due to age are eliminated.

The results of the survey have highlighted the fact that bottled water's branding has a large impact on consumer willingness to pay, but this may also indicate that necessity products in general are even susceptible to the impact of branding. For these purposes, it's helpful to look at necessity products as those in which the normal confides of supply and demand tend to break down. That is to say, high increases in price will lead to a relatively small decline in demand, as consumers are not able to make a purchasing decision strictly based on the price of the product. An example already highlighted in this paper is insulin as even with large price hikes, consumers are forced to buy the product or risk substantial negative health impact. Pharmacies often have nationally branded over the counter medicines (Claritin for example) sold next to store brand versions of the product. Despite the fact that the FDA regulates the approval, manufacture, and sale of all over the counter drugs (including the store brands) and requires all brands reach the

same safety and efficacy standards, the national brands have a heavy surcharge compared to their store brand counterparts.

Another example is eyewear, as an estimated 40% of Americans need glasses (Ossala, 2015). While eyesight has extreme importance in 2021, that hasn't stopped luxury firms from entering into the space, who are able to charge a much steeper price per pair. Auto insurance is a legal necessity in America and while the basics of each plan can be compared to reach a best-price conclusion relatively effectively, this hasn't stopped the proliferation of dozens of brands promoting their products across every touchpoint in the customer journey including online, on television, and on billboards across America. While the product these companies are selling remains relatively the same, there is incredible power in having top of the mind awareness in this industry, with the hope a consumer will think of their product when they decide it may be worth changing insurers.

It is easy to think of necessity products from the traditional sense of food, water, and shelter, but it is important to recognize that in the modern age, more and more products are becoming a virtual necessity in a growing number of American's lives. All of these products slowly grow in popularity to reach the point where they're virtual necessities, and along the way, they all become flush with a variety of brand names. Without government regulation, it is difficult to foresee a way to remove the prevalence of branding from these product categories and so while there may not be a short-term fix to the inflation in prices branding can bring for necessity products, a consumer armed with a healthy knowledge of how branding impacts the prices of a product can make more conscious decisions about their purchases.

The research also showed that bottled water doesn't have the same "exclusivity" appeal that many other products do. The lack of association seems to indicate that the average consumer

is aware of the necessity aspect of the product and remains conscious of this aspect when faced with the opportunity to obtain a more exclusive version. This is a key trait for necessity products. If insulin were to be sold in exclusive regions, with fast sell-out times, many potential-customers would face detrimental health effects because of the limited supply. While there does seem to be some danger with the branding of necessity products, the lack of exclusivity appeal in bottled water seems indicative of a powerful trend for all necessity products. Consumers are able to differentiate between wants and needs in this case and businesses don't face the same cost-incentives to keep these products at a supply lower than the demand. This trend is especially important to be aware of in the case of firms who sell a product that may be a necessity to some and a want for others. They must remain conscious that if they introduce an element of exclusivity to their product, some of their consumers may get excited about it, while others will face detrimental consequences because of it.

The lack of significance for the antecedent variables tested also lends itself to interesting insight about customer's perceptions of bottled water and necessity products in general. While I had hypothesized that customers who were health conscious would be more prone to drinking bottled water, the data collected suggested this was not a factor in customer's decisions. This was also the case for consumer's beliefs about the environment. This seems to imply that for necessity products, a customer's personal life choices and ideologies don't have as strong of an impact on their willingness to pay for a product. This tends to make sense, as a customer looking to purchase insulin cannot be as invested how the product reflects their personal life choices as someone who is making a decision about their choice in alcohol, or favorite t-shirt, best-tasting restaurant.

This may be seen as a positive, as it reduces the number of ways a brand can incentive their potential customers to pay more for a product. It may be more difficult to create a brand of insulin that's seen as the go-to option for customers who enjoy cycling, or those who are passionate about the environment. However, the reduced ability for brands to target specific niche groups because of their personal preferences may put more weight into how they develop their overall brand. Recognizing that they have more limited options to appeal to customers than a traditional product, companies selling necessity products may invest more time and money into cultivating a brand image that customers associate with a higher price, as the brand image remains an area where customer's willingness to pay can be affected. As necessity products inherently reduce the number of variables that customers care about, companies looking to differentiate themselves will likely put more focus on those variables that do. For customers who are unaware of how their willingness to pay is constantly being influenced, this may pose a danger, as these efforts are more likely to resonate with them, artificially increasing their willingness to pay.

CONCLUSION

Though it's true that marketing has been around throughout the duration of human history, it has only been in the past 100 or so years that the field has really taken off. In this time there has been no denying the impact the field has had on modern society, as it has increased the speed of adoption for new technologies, given more power to start-ups and smaller companies to reach their consumers, and improved the competitiveness in the marketplace. It has also helped give a voice to the consumer and strengthened the importance of companies addressing consumer needs with their products. However, this paper has highlighted the fact that for all the good marketing has done, it is not without its issues, ethically and otherwise. After conducting research involving University of Utah students, it became clear that branding plays a strong role in consumer willingness to pay for necessity products. It also became clear that other variables that may traditionally impact consumer's willingness to pay, such as personal beliefs and product exclusivity, were not important factors. This is not inherently a bad thing, but it highlights an aspect of these products that firms may be able to exploit to the benefit of their bottom line, while harming the end user.

While most products fall outside of the focus of this research, for those products that are seen as a necessity for the majority of its consumers, the power of marketing seems to be further inflating the price of the product. Bottled water is worth more to consumers when they're drinking it from a prestigious brand, despite the lack of additional benefits they receive. This danger holds true for other necessity goods, and there is little that can be done from a regulatory perspective. It is up to the businesses themselves to market and brand their product in a socially conscious way that remains aware of the inflationary measure their efforts can have on the price they charge consumers. Efforts can also be taken by the consumer to remain aware of the impact marketing is having on their decisions, especially in the context of necessity products. Rarely are

consumers faced with a single option to address their need and remaining aware of how the various companies are attempting to influence their purchasing decision can go a long way towards reducing the negative impacts marketing has on these products.

Further research can be done in the bottled water space to understand exactly who is consuming bottled water, and what percentage of their customers are using it to maintain healthy levels of hydration on a daily basis. There is also room to further explore the variables that influence customer willingness to pay, including the shape of the packaging, the size of the bottle, and the specific aspects of various brands that are important. Research can also be done for a variety of products that fall into the necessity category to better understand the implications of this paper. This work can help underscore the impact that branding has, or challenge that bottled water may be unique in this subgroup of products. For now, I believe readers can benefit from this work by remaining conscious of the factors that are influencing the product decisions they make, especially for their personal necessities.

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Appendix 2 – Environmental Consciousness Variable Formation

| Component Matrix^a | |
|-------------------------------------|----------------|
| | Component 1 |
| Ecological Participation | .862 |
| Fin support environment group | .807 |
| Circulate a petition | .816 |
| Protest environmental conditions | .819 |
| Vote environmentally conscious | .550 |
| Write to harmful firms | .723 |

Extraction Method: Principal Component Analysis.
a. 1 components extracted.

Reliability Statistics

| Cronbach's Alpha | N of Items |
|------------------|------------|
| .846 | 6 |

Item-Total Statistics

| | Scale Mean if Item Deleted | Scale Variance if Item Deleted | Corrected Item-Total Correlation | Cronbach's Alpha if Item Deleted |
|----------------------------------|----------------------------|--------------------------------|----------------------------------|----------------------------------|
| Ecological Participation | 12.95 | 33.348 | .760 | .794 |
| Fin support environment group | 12.88 | 34.535 | .681 | .810 |
| Circulate a petition | 12.88 | 32.504 | .722 | .800 |
| Protest environmental conditions | 13.15 | 34.771 | .691 | .808 |
| Vote environmentally conscious | 11.02 | 35.145 | .434 | .871 |
| Write to harmful firms | 13.72 | 40.219 | .590 | .833 |

Scale Statistics

| Mean | Variance | Std. Deviation | N of Items |
|-------|----------|----------------|------------|
| 15.32 | 49.012 | 7.001 | 6 |

Appendix 3 – Health Consciousness Variable Formation

Component Matrix^a

| | Component 1 |
|--|----------------|
| Attentive to inner feelings about my health | .774 |
| I reflect about my health a lot | .762 |
| I notice how I feel physically through the day | .696 |
| I take responsibility for the state of my health | .696 |
| Good health takes active participation | .736 |
| Living life without disease is important | .631 |
| Living life in the best possible health is important | .786 |

Extraction Method: Principal Component Analysis.

a. 1 components extracted.

Reliability Statistics

| Cronbach's Alpha | N of Items |
|------------------|------------|
| .849 | 7 |

Item-Total Statistics

| | Scale Mean if Item Deleted | Scale Variance if Item Deleted | Corrected Item-Total Correlation | Cronbach's Alpha if Item Deleted |
|--|----------------------------|--------------------------------|----------------------------------|----------------------------------|
| Attentive to inner feelings about my health | 33.62 | 29.888 | .671 | .818 |
| I reflect about my health a lot | 33.69 | 28.972 | .654 | .821 |
| I notice how I feel physically through the day | 33.17 | 31.432 | .580 | .832 |
| I take responsibility for the state of my health | 32.98 | 32.621 | .572 | .833 |
| Good health takes active participation | 32.71 | 32.345 | .612 | .828 |
| Living life without disease is important | 32.89 | 32.065 | .508 | .843 |
| Living life in the best possible health is important | 32.85 | 30.765 | .677 | .818 |

Scale Statistics

| Mean | Variance | Std. Deviation | N of Items |
|-------|----------|----------------|------------|
| 38.65 | 41.364 | 6.432 | 7 |

Appendix 4 – Regression Variable Formation

Model Summary

| Model | R | R Square | Adjusted R Square | Std. Error of the Estimate |
|-------|-------------------|----------|-------------------|----------------------------|
| 1 | .094 ^a | .009 | -.015 | 1.456384454 |

a. Predictors: (Constant), Environmental_Consciousness, Health_Consciousness, I primarily identify as:

ANOVA^a

| Model | | Sum of Squares | df | Mean Square | F | Sig. |
|-------|------------|----------------|-----|-------------|------|-------------------|
| 1 | Regression | 2.416 | 3 | .805 | .380 | .768 ^b |
| | Residual | 269.374 | 127 | 2.121 | | |
| | Total | 271.790 | 130 | | | |

a. Dependent Variable: @1

b. Predictors: (Constant), Environmental_Consciousness, Health_Consciousness, I primarily identify as:

Model Summary

| Model | R | R Square | Adjusted R Square | Std. Error of the Estimate |
|-------|-------------------|----------|-------------------|----------------------------|
| 1 | .098 ^a | .010 | -.014 | 1.026009376 |

a. Predictors: (Constant), Environmental_Consciousness, Health_Consciousness, I primarily identify as:

ANOVA^a

| Model | | Sum of Squares | df | Mean Square | F | Sig. |
|-------|------------|----------------|-----|-------------|------|-------------------|
| 1 | Regression | 1.296 | 3 | .432 | .410 | .746 ^b |
| | Residual | 133.692 | 127 | 1.053 | | |
| | Total | 134.988 | 130 | | | |

a. Dependent Variable: @1.25

b. Predictors: (Constant), Environmental_Consciousness, Health_Consciousness, I primarily identify as:

Name of Candidate: Drew Kiel
Birth date: January 5, 1999
Birth place: Monterey, California
Address: 633 De Soto St.
Salt Lake City, UT, 84103