

The Influence of Environmental Brand Activism on Millennial Environmental Consumer  
Behavior

by

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**ABSTRACT**

In this paper, the researchers examine the influence of environmental brand activism as green advertising on U.S. millennials' green purchasing and recycling behavior intentions. The influences of gender, environmental knowledge, advertisement attitude and brand attitude are also analyzed. Researchers conducted an experiment through an online survey and randomly exposed each respondent to one of four advertisements, testing and controlling for environmental brand activism message vs. generic message and known brand vs. unknown brand. The sample consisted of 174 millennial students from the University of Colorado Boulder. Results suggest that millennials exposed to environmental brand activism as advertising possess higher intentions to engage in green purchasing and recycling upon exposure. Also, the results suggest that millennial women are more inclined to engage in green purchasing and recycling after exposure. The main implication for this study is that respondents exposed to the environmental brand activism message felt favorable attitudes towards the advertisement but not the brand, which calls for further research.



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### **Literature Review**

Global warming, the increase of temperatures on earth and in our oceans, is caused by human activities such as fossil fuel burning and large-scale deforestation, and it is one of the most important environmental issues today (Houghton, 2005). Many products are manufactured and disposed of by burning fossil fuels, which contributes to the ecological problems we face today. Many consumers understand that their consumer behaviors impact ecological problems and decide to purchase green products and recycle as means to reduce their personal impacts (Laroche et al., 2001 and Martinho et al., 2015). Research suggests that green branding and advertising serve as effective ways to alter consumer's environmental behavior such as influencing green purchasing and recycling (Khashe et al., 2015), but no studies have tested the effectiveness of environmental brand activism as green advertising as a method of behavior change. This study fills the gap in the literature by testing how environmental brand activism as advertisements can influence behavior change intentions. Research indicates that consumers from all generations would respond well to environmental brand activism because of the growing belief that businesses should be held responsible for their emissions and make special efforts to reduce climate change (Sharma et al., 2017). Specifically, Millennials seem like they would respond best to environmental brand activism because 78% believe that companies should support environmental or social causes, 87% of millennials are likely to purchase a product with an environmental or social benefit, and 69% consider a company's environmental dedication when deciding which brands to purchase from (Cone Inc. and AMPC Agency, 2006 and Cone Inc. and AMPC Agency, 2015). The following paper seeks to understand how environmental brand activism as green advertising impacts millennials intentions to purchase green products and recycle.

### **Environmental Brand Activism**

Activism is defined as “action on behalf of a cause, action that goes beyond what is conventional or routine” and has been traditionally demonstrated in door-to-door canvassing, public rallying, and fasting. Forms of activism are constantly evolving due to changes in politics, culture, and technology (Martin, 2017, p.2). A new form of activism is occurring in marketing. Many companies now tie their brands with social issues and communicate this through advertising and on their social media platforms (e.g., Castillo, 2014).

This marriage between activism and marketing stems from social marketing, “the adaptation and adoption of commercial marketing activities, institutions and processes as a means to induce behavioral change in a targeted audience on a temporary or permanent basis to achieve a social goal,” which has been gaining popularity over past decades (Dann, 2010, p.152). No academic studies have officially defined this marketing activism, but it has been titled “brand activism” in the press. Over the past few years, brand activism has been mentioned multiple times in marketing trade journals and mainstream news from all over the world (e.g., Castillo, 2014; Frampton, 2017; Janmohamed, 2017; Louise, 2017; Lirtsman, 2017). Topics have ranged from women’s rights, to disease awareness, and environmental problems. This study focuses on environmental problems conceptualized through environmental brand activism.

Environmental brand activism stems from the concept of green marketing, which is defined as “environmentally-based marketing programs which include corporate policies, practices and procedures in the realm of marketing that explicitly incorporate an ecologically friendly focus with a goal of creating revenue providing exchanges that satisfy organizational and individual objectives for [a] product and/or product line” (Rajeev, 2016, p. 2).

Environmental brand activism expands on the green marketing definition by focusing on inspiring consumers to act in eco-friendly ways.

Based on trade and mainstream news coverage, this study defines environmental brand activism as a company utilizing its brand platforms, such as advertisements, its website, product packaging, spokespeople and other tools to authentically promote environmental action among consumers (e.g., Armano, 2017; Armano, 2017; Castillo, 2014; Frampton, 2017; Janmohamed, 2017; Louise, 2017; Lirtsman, 2017; Thompson, 2004; Wohl, 2016). A key element in this definition is “authenticity,” which is defined as “a brand that has values and morals and stands by them no matter what while honestly divulging its practices (flaws and all)” (Coffee, 2014, p.1). Authenticity is an extremely important aspect of environmental brand activism for two reasons. First, the company must truly make an effort to support the environment, act on behalf of the cause, or it is not true activism (Martin, 2017). Second, if the company does not truly make an effort to help the environment, then the brand will earn a bad reputation and likely lose business (Correa et al., 2017).

Environmental brand activism is not simply a marketing campaign. A company that engages in environmental brand activism must view commitment to the environment as a pillar of its company. Patagonia is a great example of a company that engages in environmental brand activism. The environment is at the core of its brand, as its mission says: “Build the best product, cause no unnecessary harm, use business to inspire and implement solutions to the environmental crisis” (“Patagonia’s Mission Statement,” n.d.). On its YouTube, Patagonia releases videos that try to inspire viewers to behave in more environmentally responsible ways (“Patagonia Action Works,” 2018). Additionally, one of its most memorable forms of environmental brand activism was through green advertising, a print ad that said, “Don’t Buy This Jacket,” a campaign that

tried to motivate people to not buy extra things that they do not actually need (“Don’t Buy This Jacket,” 2011). Patagonia’s “Don’t Buy This Jacket” campaign is an example of environmental brand activism because it motivates consumers to behave with eco-friendliness, and its mission statement and YouTube videos demonstrate that it genuinely supports the cause.

### **Green Branding, Positioning, and Advertising**

**Branding and Positioning.** Advertising is medium for a company to feature environmental brand activism, which extends a company’s brand position. According to the American Marketing Association (n.d.), branding is the process of creating and communicating “a name, term, sign, symbol, or combination of them that is designed to identify the goods and services of one seller or group of sellers and to differentiate them from those of competitors.” Every person develops a unique perception of each brand through the process of attaching “attributes, benefits, images, thoughts, feelings, attitudes and experiences” with brands; thus, brands exist in the minds of consumers (Keller, 2002). A consumer that is exposed to environmental brand activism likely will connect attributes, benefits, images, etc. relating to the environment with the brand. This concept is related to brand positioning. Ghodeswar (2008) defines positioning as the process of differentiating a brand from its competitors in the mind of the consumer, while fulfilling the consumer’s needs and expectations for products and services from that category. More simply stated, Ries and Trout (2016) describe positioning as “an organized system for finding a window in the mind.” When a person sees environmental brand activism, the brand is positioning itself as a green brand in the consumers mind.

**Green Branding and Positioning.** A green brand is defined as “a brand, which offers a significant eco-advantage over its competitors and is able to attract consumers who set a high priority on making green purchases” (Grant, 2008, p. 25). The eco-advantage is the point of

differentiation. Green positioning is the process of differentiating the green brand from its non-green competitors in the mind of the consumer (Wang, 2017). Successful green branding is dependent on effective positioning. Hartmann et al., (2005) researched the most effective green positioning strategies on college students in Spain. Participants were exposed to five advertisements from brands that use different positioning strategies. All of the ads had four identical elements relating to known small-size car brands and each ad had one unique element relating to positioning. The three experimental groups tested one of these green positioning strategies: functional, emotional, a combination of functional and emotional. The functional positioning group observed a Mercedes ad that described the cars green technology. The emotional positioning ad displayed copy and graphics designed to remind the participants of the positive feelings they experience in nature. The group that observed a combination of the two positioning strategies observed an ad that included attribute-based and emotional-based elements. After exposure, the participants completed a questionnaire about the advertisements. The study found that positioning is most effective when brands use a combination of emotional and functional positioning strategies.

**Green Advertising.** Environmental brand activism advertisements are a form of green advertising, which is defined as advertising that meets one or more of these objectives:

1. “Explicitly or implicitly addresses the relation between a product/service and the biophysical environment;
2. Promotes a green lifestyle with or without highlighting a product/service;
3. Presents a corporate image of environmental responsibility” (Banerjee et al., 1995, p. 22).

Banerjee and colleagues (1995) uncovered the most effective ways to analyze green advertising

by conducting a content analysis on 95 green TV ads and 173 green print ads. The ads were analyzed by these dimensions: product type or corporate image, degree of environmental information provided, characters presented in the advertisements (male, female, cartoon, animals, etc.), objective, and appeal (emotional, rational, natural/organic, testimonial, etc.). The researchers found that green advertising is best analyzed on these three dimensions: sponsor type (for-profit or non-profit), ad focus (company-focused or consumer-focused) and depth of ad (degree of environmental information provided). This study provides ways to categorize environmental brand activism via how green advertising is studied. Additionally, the researchers concluded that green advertising during the time of the study, twenty years ago, served to acknowledge people's environmental concern as a way to lightly connect with consumers as opposed to of utilizing the advertising as a methods to garner investment in environmental problems and change environmental behavior. The rise of environmental brand activism, which can be observed through trade journals (e.g., Armano, 2017; Armano, 2017; Castillo, 2014; Frampton, 2017; Janmohamed, 2017; Louise, 2017; Lirtsman, 2017; Thompson, 2004; Wohl, 2016) demonstrates the transformation of green marketing from nodding at environmental concern (e.g., Rajeev, 2016) to decisively incorporating the environment into a company's marketing strategy in order to promote action.

**Greenwashing.** It is important that green advertising and environmental brand activism claims are accurate, or it could hurt the business negatively in terms of brand reputation and sales. The practice of advertising false or misleading claims relative to environmental practices is called greenwashing (Furlow, 2010). An example of greenwashing is Volkswagen's 'Clean Diesel' advertisements, in which the company illegally claimed that its cars release fewer emissions than they actually do (Coffe, 2016). After the Volkswagen news spread, the company

experienced a 24.7 percent drop in sales compared to sales exactly one year earlier (Davies, 2015). This incident was named “Disealgate,” which demonstrates the negative reputation Volkswagen earned from lying and false advertising.

Correa and colleagues (2017) conducted a study to better understand the influence of perceived greenwashing on consumer attitudes, beliefs, and perceived benefits of green products. The researchers surveyed 359 people from Brazil about greenwashing, confused brand perception, perceived benefits, attitudes, and beliefs. The results indicate that when a consumer thinks a company may be greenwashing, the consumer no longer believes the product is green, he or she feels a negative attitude toward the brand, and no longer acknowledges the benefits of the product. The study confirms that when a consumer suspects greenwashing, the brand then loses credibility in the consumer’s mind.

### **Environmental Consumer Behavior**

According to Stern et al. (1997), consumer behavior is environmentally significant if it affects the environment positively, either by reducing impact or having no impact at all. There are two types of environmental consumer behavior: direct mitigation, meaning it reduces environmental stress at the source, or indirect mitigation, engaging in actions that eventually lead to reductions in environmental stress. An example of direct mitigation is deciding to bike instead of drive, as your effort explicitly reduces the amount of greenhouse gases you would otherwise put into the air through driving. An example of indirect mitigation is donating to a charity that researches solutions for environmental problems, as your contribution will eventually have a positive effect on the environment (Stern et al., 1992). Numerous forms of environmental consumer behavior exist, including purchasing green energy, staying at green hotels, engaging in



environmental activism, donating to environmental charities, purchasing green products, and recycling, among others.

This study will focus on whether or not exposure to environmental brand activism inspires consumers to engage in environmental consumer behavior exhibited as purchasing and recycling, and the extent to which various influences, such as gender and environmental knowledge, advertisement attitude, and brand attitude, affect behavior. For the current study, environmental consumer behavior will refer to green purchasing and recycling.

**Green Purchasing.** Green purchasing refers to purposeful buying of products and services that minimize harmful environmental impacts throughout the product's life cycle, including all steps from manufacturing to disposal. Green product characteristics include conserving natural resources, reducing waste and minimizing pollutant emissions (Vazifehdoust et al., 2013).

Laroche and colleagues (2001) conducted a study to learn which demographics and psychographics serve as good predictors for environmental consumer behavior. Census data was used to select streets to survey within a city, and then questionnaires were randomly distributed door-to-door on selected streets. The questionnaire tested respondents on their green attitudes and reported environmental consumer behavior. The results indicate that 57% of females, 40% of males, and 56% of individuals who are married are willing to pay more for green products, which suggests a large segment of consumers are interested in green products.

Empirical evidence suggests that many influences lead to green purchasing. Examples this study will focus on include green advertising (e.g., Ankit and Mayur, 2013; Chemika et al., 2015; Hatyko and Matulich, 2008; Khase et al., 2015) gender (e.g., Martinho et al., 2015; Uddin and Khan, 2015; Zelezny et al., 2000), and environmental knowledge (e.g., Birgelen et al., 2009;

Malik and Signal, 2017; Martinho et al., 2015; Suki, 2013). The relationship between green purchasing, green advertising, gender, and environmental knowledge will be analyzed further in the following sections.

**Recycling.** According to the United States Environmental Protection Agency (n.d.), recycling refers to gathering and transforming used materials into new products. Benefits of recycling include reducing the amount of waste sent to landfills, conserving natural resources, minimizing pollution, and supporting the U.S. economy. In a recent study, the EPA uncovered how valuable recycling is to our U.S. economy. It found that in a single year, recycling in the United States supports 757,000 jobs, \$36.6 billion in wages, and \$6.7 billion in tax revenue (“Recycling Economic Information Study,” 2016). Overall, recycling behavior has been steadily improving among Americans. The amount of material in the U.S. recovered from recycling increased from 5.6% in 1960 to 66.4% in 2014 and the recycling rate of bottles has increased overall from 22% in 2000 to 28% in 2014 (“Recycling in the U.S.,” 2017).

Researchers found multiple factors that predict recycling behavior. Examples in this study will focus on green advertising (e.g., Khashe et al., 2015), gender (e.g., Oztekin et al., 2017; Meneses and Palacio, 2005; Zelezny et al., 2000), and environmental knowledge (e.g., Birgelen et al., 2009 and Martinho et al., 2015). The relationship between green recycling, green advertising, gender, and environmental knowledge will be studied further in the following sections.

### **The Millennial Generation and Environmental Behavior**

Several factors influence environmental consumer behavior, including generation. This study seeks to understand if exposure to environmental brand activism through green advertising influences American millennials to purchase green products and recycle. The American millennial generation was selected because research indicates that this generation engages in

green purchasing and recycling, but a small amount of research exists on whether or not green advertising motivates millennials to purchase green products and recycle.

Cone Inc. and AMP Agency (2006) developed its 2006 Cone millennial Case Study from an online survey that received 1,800 respondents ages 13 to 25 years old. Based on the study, environmental brand activism would greatly appeal to millennials because millennials are more likely to trust in, buy, and recommend others to purchase from companies that give back to the environment. Specifically, sixty-eight percent of respondents agreed that a company's environmental responsibility is a significant factor when deciding which products to purchase. Conversely, forty-five percent of respondents would discontinue purchasing a company's products if the company is environmentally irresponsible. To put these statistics in perspective, there are 78 million millennials living in the United States.

Research indicates that millennials will likely purchase green products. Kanchanapibul and colleagues (2013) investigated the influence of ecological affect and ecological knowledge on green purchasing behavior of Chinese millennials ages 18 through 30. They conducted a survey and found that in terms of green purchasing intention questions, the average means were over 3.5 out of 5.0, which indicates that respondents expressed strong inclinations to purchase green products, and their responses to other questions indicated that they are likely to commit to their desires to purchase green products.

To date, only Cone Inc. and AMP Agency (2006) has tested the likelihood of millennials to recycle. The survey results indicate that recycling is the highest pro-social activity that millennials engage in, with 87% of millennials reporting that they have recycled over the past year. In addition, recycling is the pro-social activity in which millennials feel like they are making the largest impact.

### **Advertising and Environmental Behavior**

Empirical research indicates that exposure to green advertising also influences environmental consumer behavior in millennials. The following studies (e.g., Ankit and Mayur, 2013; Chemika et al., 2015; Hatyko and Matulich, 2008; Khase et al., 2015) outline the relationship between environmental attitude, environmental behavior, and environmental branding exposure resulting in environmental behavior.

Two studies seek to understand the impact of green advertising on attitudes and environmental consumer behavior. Haytko and Matulich (2008) surveyed 565 respondents about their attitudes, environmental behavior, and demographics. The respondents attended American public and private universities and fit into the millennial demographic. The respondents were coded into three groups by their environmental behavior scores: environmentally responsible (averages 3.5 or higher), environmentally apathetic (averages 2.5 or lower), or neutral. After organizing each group, it became evident that the environmentally responsible group scored higher in questions regarding positive attitudes towards green advertising and inclinations to engage in environmental behaviors compared to the other groups. This study shows that millennials who possess positive attitudes towards green advertising in general are more likely to engage in green purchasing. Ankit and Mayur (2013) confirmed these results in a more recent survey with Indian millennials ages 18 to 25. The results confirm Haytko and Matulich's finding: millennials that possess more positive attitudes towards green advertising are more likely to purchase green products.

Chemika and colleagues (2015) tested the relationship between green advertising and green purchase intentions and factors that moderate the relationship. Specifically, their study researched the effect of environmental knowledge (the consumer's ability to understand nature

systems and how they impact society) cultural values, income, education level, gender, and green advertising on green purchasing intention. A survey was distributed and completed by 405 Malaysians, half of which were millennials. The data was analyzed through the structural equation model in order to understand mediating factors. The results supported that green advertising significantly influences green purchasing intentions, and people with a college education and women are more likely to purchase green products when exposed to green advertising.

In addition, Khashe et al. (2015) investigated the impact of exposing people to LEED certified building branding in order to understand its influence on environmental behavior. The researchers conducted an experiment by testing millennials in a virtual reality simulation. The test group was the branded group, the group that was exposed to LEED certified branding prior to the simulation. The control group was the non-branded group, who was not exposed to LEED building branding. Before the groups experienced the virtual reality setting, the branded group was instructed to read a packet about LEED buildings and its benefits. While in the virtual reality setting, both groups were instructed to throw out waste or add light to the room. The participants had the option to landfill or recycle and use natural light or turn on the switch. The researchers statistically analyzed the results in order to learn if the behavior of the branded group was different than the non-branded group. The results indicated that those in the branded group chose the eco-friendly alternatives, the natural light and the recycling bin, significantly more than the non-branded group. In this experiment, the role of the LEED branding packet that explains LEED branding and its benefits is very similar to a green advertisement; its purpose is to persuade the consumer to behave in an eco-friendly manner in order to reduce environmental

impacts. This study suggests that millennials are likely to engage in environmental behaviors after exposure to environmental brand activism.

Based on the literature, millennials exposed to green messaging are more likely to engage in environmental behaviors, especially if they have a positive attitude to the advertisement.

Advertising is more likely to connect with millennials if the content is cause-focused, the company is authentic, and the content is engaging and meaningful (Cone Inc. and AMP Agency, 2016 and Minar, 2016). Therefore, the following is proposed:

H1: Millennials exposed to environmental brand activism in the form of green advertising will be more inclined to purchase green products post exposure.

H2: Millennials exposed to environmental brand activism in the form of green advertising will be more inclined to recycle post exposure.

**Advertisement and Brand Attitudes.** Advertisement attitude is defined as “consumers’ favorable or unfavorable responses to a particular advertisement based on various advertisement factors; it is the emotional change after viewing the advertisement” (Lee et al., 2017). Brand attitude is the degree to which a consumer views the brand as good or bad, pleasant or unpleasant, poor quality or high quality, if the consumer likes or dislikes it (Mitchell and Olson, 1981). Although advertisement attitude and brand attitude are separate concepts, research shows that they are deeply connected. In a meta-analysis of over 33 studies conducted on brand attitude and advertisement attitude, Brown and Stayman (1992) confirmed that advertisement attitude affects brand attitude formation and an already formed brand attitude affects attitude toward an advertisement. The research showed that both attitudes play an important role for purchase intention. Therefore, the following research questions are proposed:

RQ1: How does environmental brand activism messaging impact advertisement attitude?

RQ2: How does environmental brand activism messaging impact brand attitude?

### **Gender Environmental Behavior**

Scholars have empirically studied the relationship between gender and environmental behavior for decades with contradictory results. The majority of the literature suggests that women are more inclined to engage in environmental behavior (e.g., Chemika et al., 2016; Furlow and Knott, 2009; Khashe et al., 2015; Martinho et al., 2015; Meneses and Palacio, 2005; Picket-Baker and Ozaki, 2008; Oztekin et al., 2017; Uddin and Khan, 2015; Zelezny et al., 2000), while others report that gender and environmental behavior are not related (e.g., Khashe et al., 2015, Suki, 2013; Muralidharan and Xue, 2016). However, there are no empirical findings that suggest men engage in environmental behavior more than women.

A few empirical studies (e.g., Khashe et al., 2015; Muralidharan and Xue, 2016; Suki, 2013) suggest that gender and environmental behavior are not related. These studies look at the relationships between gender plus health, personal networks, and green branding in millennials. Suki (2013) studied how environmental knowledge, healthy food, and a healthy way of life influences the ecological behaviors of 200 millennials from Malaysia through a survey. In this study, the researchers did not find a significant relationship between gender and environmental behavior. Muralidharan and Xue (2016) expand on the previous study by analyzing the factors that influence Chinese and Indian millennials to engage in a specific environmental behavior, green purchasing, using a consumer socialization framework. A survey tested social structural variables, including gender, age, education, and family structure, and socialization agents, which included family, peers, and mass media. The results indicated that social structure variables, which includes gender, did not influence purchasing. And, in Khashe et al., (2015)'s experiment on LEED certified branding's influence on American millennial environmental behavior, results

indicated that demographic characteristics such as gender did not impact environmental behavior.

However, several other empirical studies suggest that gender and environmental behavior are strongly related (e.g., Chemika et al., 2016; Furlow and Knott, 2009; Khashe et al., 2015; Martinho et al., 2015; Meneses and Palacio, 2005; Picket-Baker and Ozaki, 2008; Oztekin et al., 2017; Uddin and Khan, 2015; Zelezny et al., 2000). Based upon these results, it is suggested that female affinity to engage in environmental behavior occurs at all ages and that women are more likely than men to engage in green purchasing and recycling. Zelezny et al., (2000) researched gender differences in environmentalism by conducting three separate studies that analyzed environmental attitudes and behavior of different age groups, nationalities, and gender using Dunlap's New Environmental Paradigm (NEP) survey. The first study surveyed middle school children from a school in California in 1994 and 1995, the second study surveyed students from 14 universities throughout the United States, Latin America, and Europe, and the third surveyed a smaller population of university students (the nationalities were not disclosed). The results from all three studies indicated that girls and women possess stronger concerns about the environment and intentions to engage in environmental behavior such as recycling and environmental activism. Picket-Baker and Ozaki (2008)'s study on how marketing communications can influence consumers to behave in eco-friendlier ways expands on Zelezny et al.'s (2000) findings about environmental attitude. This study also used the NEP survey to learn more about mothers who shop at the supermarket. The researchers surveyed fifty-two mothers, found that they possess strong pro-environmental attitudes regarding environmental problems, averaging a score of 2.6 out of 3. These studies indicate that girls and women of all



ages and nationalities tend to possess pro-environmental attitudes that lead to environmental behaviors.

Scholars have confirmed correlations between being a woman and possessing intentions to purchase green products. Zelezny et al. (2000)'s study mentioned previously, found that women possess stronger intentions to purchase green products compared to men. Years later, additional studies confirm similar results. In research conducted to learn about the factors that inspire green purchasing among young urban consumers, Uddin and Khan (2015) surveyed 161 Indian millennials and discovered a significant difference between genders and environmental attitude and green purchasing behavior. The results indicated that women are more likely to purchase green products compared to men. Martinho et al., (2015) expanded on this research in their experiment to better understand the factors that influence consumer decision-making during sustainable purchasing and disposal by surveying Portuguese people between the ages of 25-65. When analyzing the data, the researchers broke respondents into two groups: those who placed more importance on environmentally friendly packaging (MIEFP) and those who placed less importance on environmentally friendly packaging (LIEFP). They found that the MIEFP contained a greater number of women compared to the LIEFP group, which meant that the women felt it was important to purchase products with environmentally friendly packaging.

In addition, scholars have confirmed connections between woman and recycling behavior. Meneses and Palacio (2005) studied the sociodemographic and psychographic characteristics that influence the different recycling roles that family members take on in a household. The researchers surveyed 358 Spanish people and categorized each person into numerous roles in terms of recycling behavior. When analyzing gender, it was found that women take on recycling leadership roles more than men. These roles include the influencer (provides

the greatest amount of information to the household regarding recycling), initiator (first proposed idea of recycling in the household), decision-maker (decides that the family will start to recycle), persuader (encourages others in the family to recycle), and enforcer (ensures that family recycling rules are obeyed). This suggests that recycling is more important to women compared to men. In addition, Oztekin et al., (2017) researched how gender impacts recycling behavior by surveying primarily Turkish millennial. The results indicated that women possess more positive attitudes and intentions to recycle.

Additionally, evidence shows that women are more easily persuaded by green branding to green purchase and recycle. The Chemika and colleagues (2016) study mentioned earlier also investigated how advertising influences sustainable consumption in Malaysian consumers, half of the respondents being millennials. The results indicated that identifying as a woman increases the likelihood that exposure to environmental advertising leads to green purchasing. In addition, Furlow and Knott (2009) studied the factors that influence millennials to respond to environmental labels and then make a purchase by surveying 256 American college students on whether or not they look for specific labels and if they would like to purchase products with specific labels. Environmental labels are a form of branding because they position the company as eco-friendly; they indicate to the consumer how eco-friendly the product and company are. The results indicated that women were extremely more likely than men to purchase products after noticing the environmental labels, which suggests that women exposed to forms of environmental branding, including advertising, are more likely to demonstrate environmental behavior.

The literature has suggested that women act more pro-environmental than men, that green advertising influences women more than men, and that millennial women are more likely to buy

a product with an environmental cause compared to the millennial men (Cone Inc. and AMP Agency, 2015). Therefore, the following is proposed:

H3: Women millennials exposed to environmental brand activism in the form of green advertising will be more inclined than men to purchase green products post exposure

H4: Women millennials exposed to environmental brand activism in the form of green advertising will be more inclined than men to recycle post exposure

### **Environmental Knowledge and Environmental Behavior**

Environmental knowledge is defined as “a general knowledge of facts, concepts, and relationships concerning the natural environment and ecosystems” (Fryxell and Lo, 2003, p. 45). Specifically, it includes knowledge about key relationships that impact the environment (i.e., the role recycling plays on our planet), an understanding of how environmental systems interact, and the belief that sustainable development is vital for the planet (Kaufmann et al., 2012).

Environmental knowledge can also be defined in relation to a product’s life-cycle. According to D’Souza et al. (2006), environmental knowledge refers to the product’s impact during manufacturing, usage, and disposal.

Men, as well as people with higher-education are known for possessing higher levels of environmental knowledge. Paco and Lavrador (2017) surveyed 800 millennials from a Portuguese university in order to investigate the relationship between environmental knowledge, attitudes, and behavior. The results suggest that men, older students, engineering majors, social science majors, and human science majors possess higher levels of environmental knowledge. Zsóka et al. (2012)’s study expands on the previous by demonstrating that environmental knowledge increases with age. The researchers created a survey to analyze environmental education, environmental knowledge, and environmental behavior of millennial Hungarians in

high school and college. The results suggest that university students possess a significantly higher level of environmental knowledge compared to high school students, which is contributed to age and more education. It also indicates that college is the time when people typically begin to engage in eco-friendly behaviors and activities.

Several studies examine the relationship between environmental knowledge and environmental behavior. Like gender, the conversation is split between two views: some scholars have found significant connections between possessing environmental knowledge and engaging in environmental behavior (e.g., Birgelen et al., 2009; Malik and Signal, 2017; Martinho et al., 2015; Suki, 2013) and others have found a non-significant relationship (e.g., Paco and Lavrador, 2017; Vazifehdoust et al., 2013). The following section will review empirical research from both sides.

Some studies found no significant relationship between environmental knowledge and behavior. Paco and Lavrador (2017)'s study mentioned earlier, surveyed university students, mostly millennials on the relationship between environmental knowledge, attitude, and environmental behavior in terms of energy consumption. The results suggest that environmental knowledge and the environmental behavior of green energy consumption are not connected. Vazifehdoust et al. (2013) conducted a similar study, focusing on the relationship between environmental knowledge, attitude, and green purchasing. The researchers collected consumer data from a province in Iran and analyzed the results through structural modeling. The results indicate that no significant relationship exists between environmental knowledge and the environmental behavior of green purchasing.

Other studies draw significant ties between environmental knowledge and environmental behavior. Scholars have found meaningful relationships between possessing environmental

knowledge and green purchasing. Suki (2013)'s study, which was mentioned earlier, surveyed 200 Malaysian millennials to understand how environmental knowledge and healthy food consumption impact environmental consumer behavior. The results suggest that environmental awareness, a component of environmental knowledge, was the greatest determinant for green product use. Two years later, Malik and Signhal (2017) studied the factors that influence consumers to develop environmental attitudes and the relationship between environmental attitudes and environmental behaviors. The researchers surveyed 300 Indian millennials and found that environmental knowledge is strongly correlated with green purchasing.

Researchers have also found meaningful relationships between possessing environmental knowledge and recycling. Regarding the Martinho et al., (2015) study mentioned earlier that grouped participants into placing more importance on environmentally friendly packaging (MIEFP) and less importance on environmentally friendly packaging (LIEFP), the results suggest that increasing environmental knowledge of the LEIFP would increase recycling behavior. Birgelen et al., (2009) studied the factors that motivate recycling by analyzing consumer's purchasing decision in relation to the environment, consumer's conditional willingness to purchase items, environmental attitudes towards packaging, and environmental awareness. Data was collected through a survey of Germans between the ages of 25-60. The results suggest that consumers who possess greater awareness of environmental problems are more likely to dispose of waste in an eco-friendly manner.

Additionally, scholars have researched the relationship between environmental branding and advertising and environmental behavior in people that possess high levels of environmental knowledge (e.g., Fernando et al., 2016; Haryanto and Budiman, 2014; Schaffner and Demarmels, 2015). Fernando et al. (2016) studied the relationship between environmental concern and

environmental advertising by surveying 190 Indian millennials and analyzing the data through statistical analyses. They hypothesized that those who possessed high levels of environmental knowledge would experience high message involvement when exposed to environmental advertising, meaning they would spend a longer time thinking about the message, which would in turn affect the consumer's attitude. However, the results indicated that environmental knowledge did not have an effect on message involvement. Others studied types of environmental messaging that have the most impact on people who possess high levels of environmental knowledge. Schaffner and Demarmels (2015) explored consumer responses to emotional and normative messaging and traditional information campaigns as means to encourage environmental behavior, while looking closely at environmental attitude and environmental knowledge. The results suggest that people with high levels of environmental knowledge are less inclined to listen to emotional communications strategies, which are commonly used in environmental advertising. Research also suggests that consumers who possess high levels of environmental knowledge are less impacted by branded messages relating to the environment. Haryanto and Budiman (2014) investigated the impact of environmental knowledge on green positioning, functional and emotional benefits, and product attitude. The researchers collected data from 400 consumers interested in green product as they shopped in department stores. Next, the scholars tested the data through hierarchical regression analyses and the results suggested that the more environmental knowledge that consumers possess, the less likely a brand will be positioned as green in their minds.

Based on the literature, people with high levels of environmental knowledge are usually less receptive to environmental advertising. Therefore, the following is proposed:

H5: Millennials that possess higher levels of environmental knowledge will experience a smaller change in inclination to purchase green products after exposure to environmental brand activism as green advertising compared to groups with lower levels of environmental knowledge.

H6: Millennials that possess higher levels of environmental knowledge will experience a smaller change in inclination to recycle after exposure to environmental brand activism as green advertising compared to groups with lower levels of environmental knowledge.

### **Method**

In order to test the hypotheses, an experiment was conducted on millennial students and alumni from the University of Colorado Boulder. The experiment took the form of an online survey on Qualtrics. Prior to research, the researchers received permission from the International Review Board to conduct the study.

Data collection took place for about a month, between January 30th and February 27th, 2018. To recruit respondents, the researchers communicated with professors who agreed to send the survey to their classes via email. The researchers also posted the survey link in official University of Colorado Facebook groups; these groups require members to provide their University of Colorado email in order to join the groups. Incentives were provided to participate. The researchers randomly selected one participant to receive a \$20 Amazon gift card. Additionally, some professors offered extra credit for participation.

When completing the survey, each respondent answered the same survey questions. The first section asked respondents about their current environmental consumer behavior, the second section displayed the experimental advertisement and measured participants' advertisement and brand attitudes, the third section measured environmental knowledge, and the fourth section asked the same questions as in section one, but instead measured intentions to purchase green products and recycle in the future. See Tables 1, 2, 3, and 4 for specific questions. The questions in sections one and four were modeled after questions that measured reported ecological behavior intentions from Birgelen et al. (2009) and Kanchanapibul et al. (2013). Section three used environmental knowledge questions from Frywell and Lo (2003).



The experimental piece of the survey was the advertisement that respondents observed in section two. In total, there were four advertisements, and each respondent observed one of the advertisements. The advertisements were distributed randomly and evenly among respondents. In the experiment, the groups that received the environmental brand activism message were the test groups. The groups that received generic messages were the control groups. In order to understand how knowledge of the brand plays a role in exposure, two groups, one with an environmental brand activism message and one with a generic message included unknown products, in order to control for any opinions held about the known brand. Each advertisement included a soda can, a message, and a similar layout. Group one observed a Coca-Cola advertisement that included an environmental brand activism message, group two observed a made-up soda brand advertisement that included an environmental brand activism message, group three observed a Coca-Cola advertisement that included a generic message, and group four observed a made-up soda brand that included a generic message.

Additionally, the survey measured multiple demographic characteristics. These include gender, age, student or alumni, and student grade level. The survey also measured environmental knowledge.

To understand the relationship between environmental brand activism and ad exposure and how gender, environmental knowledge, advertisement attitude and brand attitude play a role in the relationship, the data was first tested for reliability to ensure accuracy and then statistically analyzed using Statistical Package for Social Sciences (SPSS) computer program. Tests include t-tests, ANOVA, correlations, and regressions.

Table 1

<b>Environmental Behavior Reported Pre-Exposure (Likert Scale)</b>	
Q1	I avoid buying products that are potentially harmful to the environment.
Q2	I have changed my principal products for ecological reasons.

Q3	When I have to choose between two similar products, I choose the one that is less harmful to the environment.
Q4	I make a special effort to buy paper and plastic products that are made from recycled materials
Q5	I DO NOT consider environmental issues when making a purchase.
Q6	I dispose of empty food and beverage packages in an environmentally-friendly way.
Q7	When deciding how I will dispose of food or beverage products, I choose the eco-friendlier disposal option
Q8	When it's time to get rid of a can, I throw it in the bin that is closest, regardless if the bin is recyclable or landfill.
Q9	I DO NOT recycle at home.
Q10	When out with friends, I throw my recyclable can in the landfill bin if I see my friends doing it.

Table 2

<b>Advertisement Attitude and Brand Attitude Questions (Likert Scale)</b>	
Q1	This is a good advertisement.
Q2	This is a bad advertisement.
Q3	This is a cool advertisement.
Q4	This is an annoying advertisement.
Q5	This is a good brand.
Q6	This is a bad brand.
Q7	This is a cool brand.
Q8	This is an annoying brand.

Table 3

<b>Environmental Knowledge Multiple Choice Questions</b>	
Q1	Biodiversity is the...
Q2	The concept of "ecological footprints" refers to a measure of...
Q3	Sustainable development is usually defined as, "meeting the needs of present generations without..."
Q4	Why has the disposal of wastes caused problems for freshwater and marine ecosystems?
Q5	industrialized countries (e.g., North America and Europe), the largest environmental impact from ground transport results from?
Q6	What is the main greenhouse gas and its cause?
Q7	In Boulder County, which is most eco-friendly option to dispose of scrap food?
Q8	Boulder County plans to achieve "Zero Waste" by which year?
Q9	Which items do Boulder grocery stores charge an extra 10 cents for?

Table 4

<b>Environmental Behavior Intentions Post Exposure (Likert Scale)</b>	
Q1	In the future, I will avoid purchasing beverages in packaging that cannot be recycled.
Q2	In the future, I will purchase eco-friendly cleaning products.
Q3	In the future, I will NOT make a special effort to buy paper and plastic products that are made from recycled materials.
Q4	In the future, I will NOT consider environmental problems when making purchases.
Q5	In the future, when choosing between two similar products, I will choose the one that is less harmful to the environment.
Q6	In the future, I will NOT dispose of empty food and beverage packages in an environmentally-friendly way.

Q7	In the future, I will choose the eco-friendlier disposal option when disposing of products.
Q8	In the future, I will NOT recycle at home.

**Results**

**Respondent demographic profile**

In total, 207 respondents started the survey, but only 174 completed the necessary experimental sections. Another 22 respondents did not make it through the last section, demographics. In the end, there were 152 completed surveys.

The respondents were current students or recent graduates from the University of Colorado Boulder. The majority of the respondents were female students (74.5%) ages 18 through 25 (95.1%). Most of the respondents were in their junior (34.2%) and senior years (47.6%) of college. Table 5 shows the demographic distribution of respondents.

Table 5

	Total	%
<b><i>Gender</i></b>		
Male	39	23.6
Female	123	74.5
Other	3	1.8
<b><i>Age</i></b>		
18-21	109	66.4
22-25	47	28.7
26-30	8	4.9
<b><i>Student or Alumni</i></b>		
Student	177	92.7
Alumni	14	7.3
<b><i>Student Grade Level</i></b>		
Freshman	9	5.9
Sophomore	12	7.9
Junior	52	34.2
Senior	71	46.7
Super Senior	8	5.3

\* Each section (i.e., gender, student or alumni) adds up to different totals because some respondents stopped answering questions before the end of the survey. To understand the results, compare totals and percentages within each category.

### Experimental Groups

The survey evenly distributed the four advertisements to respondents. After removing responses that did not complete vital elements of the survey, each group has 44 members, except one has 42. Table 6 shows the distribution of respondents in each experimental group.

Table 6

Experimental Groups	Number of Subjects
Group 1: Environmental Brand Activism Message x Known Brand	44
Group 2: Generic Message x Known Brand	42
Group 3: Environmental Brand Activism Message x Unknown brand	44
Group 4: Generic Message x Unknown Brand	44

### Descriptive Analysis of Environmental Consumer Behavior of Respondents

First, the researchers measured the respondents' initial environmental consumer behavior. For analysis, environmental behavior questions were coded from "1" to "5," where lower values indicate low levels of environmental friendly behavior and high values indicate high levels of environmental behavior amongst the group. The groups' reported environmental behavior averages for green purchasing and recycling are slightly above 3.3; this means that this group of respondents engage in purchasing and recycling a moderate amount.

### Reliability Analysis

Cronbach's Alphas were calculated to ensure internal consistency for each scaled question. Scales include reported current environmental behavior, future environmental behavior intentions, brand attitude, and advertisement attitude. Each Cronbach's Alpha is approaching 1.00, which demonstrates that the scales are internally consistent. See Table 7 for each Cronbach's Alpha.

Table 7

Scale	Cronbach's Alpha
Reported Pre-Exposure Environmental Behavior (8 items)	0.868
Post-Exposure Environmental Behavior Intentions (8 items)	0.892
Attitude toward the Ad (4 items)	0.864
Attitude toward the brand (4 items)	0.874

### Green Purchasing and Recycling Tests

First, the researchers tested H1 by conducting a t-test and an ANOVA test. H1 predicted that millennials exposed to environmental brand activism in the form of green advertising will be more inclined to purchase green products post exposure. A one-sample t-test was calculated to compare the means between reported current green purchasing behavior and green purchasing intentions post advertisement exposure in the two groups exposed to the environmental brand activism message compared to the groups exposed to a generic message. The results indicate that respondents in the groups that were exposed to environmental brand activism message have higher intentions to engage in environmental consumer behavior in the future compared to their current reported behaviors ( $M_1: 3.35, M_2: 3.78, p < .01$ ). Although this difference is small, it is still significant. After only one exposure to environmental brand activism advertisement, the groups' intentions to engage in green purchasing increased on average by 0.43.

Then, the researchers conducted a one-way ANOVA test to compare the difference in means between reported green purchasing and green purchasing future intentions among all of the groups. Although the differences in means between groups were not significant, the results are still intriguing. For example, the largest difference in means between groups exists between

Group 1, environmental brand activism message and known brand, and Group 2, environmental brand activism message unknown brand. Group 2 experienced a greater change in intentions (.50) to engage in green purchasing than Group 1 (.35), which suggests that knowledge of the brand may take away from the effectiveness of environmental brand activism's effort to change environmental behavior intentions.

In conclusion, H1 is supported when the environmental brand activism experimental groups are combined but not when the groups are tested individually. See table 8 for details.

Table 8

Experimental Group	Number of Subjects	Difference in Means
Group 1: Environmental brand activism message x known brand	44	0.35
Group 2: Environmental brand activism message x unknown brand	42	0.50
Group 3: Generic message x known brand	44	0.46
Group 4: Generic message x unknown Brand	44	0.45

Next, the researchers tested H2 by conducting a one-sample t-test in order to compare the means between reported current recycling behavior and recycling behavior intentions post exposure in the two groups exposed to the environmental brand activism message. H2 predicted that millennials exposed to environmental brand activism in the form of green advertising will be more inclined to recycle post exposure. The results indicate that respondents in the groups that were exposed to environmental brand activism message have higher intentions to recycle in the future compared to their current reported behaviors ( $M_1: 3.29$ ,  $M_2: 3.82$ ,  $p < .01$ ). Although this difference is small, it is still significant. After only one exposure to environmental brand activism advertisement, the groups' intentions to recycle increased (.50), which was more than the green purchasing increase (.43).

Then, the researchers conducted a one-way ANOVA test to compare the difference in means between reported recycling behavior and recycling behavior future intentions post exposure among all of the groups. The differences in means among groups is not statistically significant, but the results are interesting because again, we observe similar results as green purchasing, Group 1, the environmental brand activism, known brand group experienced the smallest change in intentions to recycle (.49), which further suggests that knowledge of the brand plays a role in how environmental brand activism influences environmental consumer behavior intentions.

Therefore, H2 is supported when the environmental brand activism experimental groups are combined but not when the groups are tested individually. See table 9 for details

Table 9

Experimental Group	Number of Subjects	Difference in Means
Group 1: Environmental brand activism message x Known brand	44	0.49
Group 2: Environmental brand activism message x Unknown brand	42	0.50
Group 3: Generic message x Known brand	44	0.56
Group 4: Generic message x Unknown Brand	44	0.51

### **Impacts of Gender on Environmental Behavior Consumer Exposure**

To answer H3, independent sample t-tests were calculated to better understand the differences in means for green purchasing between women and men in the groups exposed to environmental brand activism. H3 predicted that women millennials exposed to environmental brand activism in the form of green advertising will be more inclined than men to purchase green products post exposure. Women had higher means for current reported green purchasing behavior (3.40) compared to men (3.24) as well as for green purchasing intentions post

advertisement exposure (3.87) compared to men (3.68), but the test results were not statistically significant, therefore, H3 is not supported. See details in table 10.

To answer H4, independent sample t-tests were calculated to understand the differences in means for recycling between women and men in the groups exposed to environmental brand activism. H4 predicted that women millennials exposed to environmental brand activism in the form of green advertising will be more inclined than men to recycle post exposure. Again, women scored higher means (3.29) in current reported recycling behavior compared to men (3.23) and scored higher in recycling intentions post exposure (3.82) compared to (3.75). Recycling intention post exposure was statistically significant ( $M=3.82, p<.05$ ). H4 is supported, as women had statistically significant, higher intentions to recycle after exposure to environmental brand activism in the form of green advertising compared to men. See details in table 10.

Table 10

<b>Environmental Behavior</b>	<b>Male Mean (n=39)</b>	<b>Female Mean (n=118)</b>
Pre exposure green purchasing	3.24	3.40
Post exposure green purchasing	3.68	3.87
Pre exposure recycling	3.23	3.29
Post exposure recycling	3.75	3.82

**Impacts of Environmental Knowledge on Environmental Behavior Post Exposure**

In addition, a one-way ANOVA test was calculated to test H5, which predicted that millennials that possess higher levels of environmental knowledge will experience a smaller change in inclination to purchase green products after exposure to environmental brand activism compared to groups with less environmental knowledge. Environmental knowledge scores were



organized into two groups: scoring below the mean (below 12.48) and above the mean (above 12.48). According to the data, the group that possessed higher levels of environmental knowledge scored higher on the current reported green purchasing questions (3.55) compared to the group with lower levels of environmental knowledge (3.16). The group that possessed higher levels of environmental knowledge also scored higher on environmental behavior intentions after exposure (3.92) compared to the group with lower environmental knowledge (3.67).

Additionally, respondents with lower environmental knowledge experienced a larger rise in their inclinations to purchase green products after environmental brand activism exposure (.51) compared to the group with more environmental knowledge (.38), but these tests were not statistically significant, therefore, H5 is unsupported. See table 11 for details.

To test H6, millennials that possess higher levels of environmental knowledge will experience a smaller change in inclination to recycle after exposure to environmental brand activism compared to those with lower environmental knowledge, a one-way ANOVA test was calculated. The findings on environmental knowledge's influence on recycling in the groups exposed to environmental brand activism are unclear. The group with less environmental knowledge scored higher on reported recycling behavior prior to exposure (3.30) than the group with more environmental knowledge (3.23), which was statistically significant ( $p < .05$ ).

Additionally, the group with higher levels of environmental knowledge experienced a larger rise in their inclinations to recycle after environmental brand activism exposure (.64) compared to the group with lower environmental knowledge (.40), but lower environmental knowledge test is not significant. H6 is unsupported because significance was not found, plus, it was predicted that those with lower levels of environmental knowledge would experience the largest growth in intentions to recycle, but this did not occur. See table 11 for details.

Table 11

<b>Environmental Behavior</b>	<b>Low environmental knowledge</b>	<b>High environmental knowledge</b>
Pre exposure green purchasing	3.16	3.55
Post exposure green purchasing	3.67	3.92
Pre exposure recycling	3.30	3.23
Post exposure recycling	3.70	3.87

### **Advertisement Attitude and Brand Attitude Tests**

The researchers statistically tested the attitudes that respondents felt towards the advertisements and the brands. First, a one-way ANOVA with each experimental group as the factor variables was tested on advertisement attitude. The results for the environmental brand activism groups and generic message groups were both statistically significant, with the respondents feeling more positive attitudes towards the environmental brand activism advertisements ( $M= 3.55$ ,  $p<.01$ ). Table 12 demonstrates the means for each group. Regarding RQ1, how does environmental brand activism messaging impact advertisement attitude, the results suggest that exposure to environmental brand activism influences millennials to feel a more positive attitude towards the advertisement.

Table 12

<b>Experimental Group</b>	<b>Number of Subjects</b>	<b>Means</b>
Group 1: Environmental brand activism message x Known brand	44	3.55
Group 2: Environmental brand activism message x Unknown brand	42	3.55
Group 3: Generic message x Known brand	44	2.96
Group 4: Generic message x Unknown Brand	44	2.69

RQ2 asked how does environmental brand activism messaging impact brand attitude, and the results indicate an unclear relationship between the them. The researchers conducted a one-way ANOVA with each experimental group as the factor variables was tested on brand attitude. The results indicate that Group 2, environmental brand activism message and unknown brand felt the most positive attitude toward the brand (3.32), followed by Group 3, generic message and known brand (3.23), followed by Group 1, environmental brand activism message and known brand (3.21). On average, the environmental brand activism message groups felt a higher brand favorability (3.32) compared to the generic message group (3.12), so overall, the respondents felt more favorable to the environmental brand activism, but only by a small figure. See table 13 for details.

Table 13

<b>Experimental Group</b>	<b>Number of Subjects</b>	<b>Means</b>
Group 1: Environmental brand activism message x Known brand	44	3.21
Group 2: Environmental brand activism message x Unknown brand	42	3.32
Group 3: Generic message x Known brand	44	3.23
Group 4: Generic message x Unknown Brand	44	3.12

On the other hand, a correlation test was ran between advertisement attitude and brand attitude. The results indicate that a significant negative correlation exists between advertisement attitude and brand attitude ( $R=-.422$ ,  $p<.01$ ). This test gives insight into RQ2, indicating that a meaningful disconnect exists between advertisement attitude and brand attitude during environmental brand activism ad exposure.

### Discussion

This study found that on average, women report higher levels of green purchasing and recycling, are more likely to engage in green purchasing and recycling after environmental brand activism ad exposure, and possess stronger environmental knowledge compared to men. Despite its lack of significance in statistical tests, the results support previous literature that has found a meaningful relationship between environmental knowledge and environmental behavior (e.g., Birgelen et al., 2009; Malik and Signhal, 2017; Martinho et al., 2015; Suki, 2013), literature that demonstrates that women engage in environmental behavior more than men (e.g., Martinho et al., 2015; Meneses and Palacio, 2005; Oztekin et al., 2017; Uddin and Khan, 2015; Zelezny et al., 2000), and literature that suggests that women are more influenced to engage in environmental behavior after exposure to advertising compared to men (e.g., Chemika et al., 2016; Furlow and Knott, 2009).

The current findings also conflict with Paco and Lavrador (2017)'s study that suggests, men possess higher levels of environmental knowledge than women. This is valuable information for researchers and advertisers because little information exists on the environmental knowledge of millennial American women.

Because women report higher levels of environmental behavior before environmental brand activism exposure and also have higher intentions than men to purchase green products and recycle after exposure, advertisers should consider devoting more effort targeting men when planning a campaign designed to inspire environmental behavior. This is because the results indicated that women are more easily persuaded to engage in environmental consumer behavior, so it is necessary to focus more research and spend on persuading men to engage in

environmental consumer behavior through environmental brand activism ad exposure because they are not as easily persuaded.

In addition, environmentally responsible, authentic companies that sell green products should consider engaging in environmental brand activism as advertising when trying to increase its women customer base and inspire women to engage in environmental behaviors since women are more easily persuaded by these messages compared to men.

This study found that millennials feel more favorable attitudes towards environmental brand activism advertisements as opposed to generic, product-focused advertisements. This supports previous research that suggests millennials are more likely to pay attention to advertising that has a meaningful message (Minar, 2016). On the other hand, although respondents exposed to environmental brand activism possessed positive attitudes about the advertisements, they felt negative attitudes about the brands. This is intriguing because in advertising, brands show consumers ads that they hopefully will feel favorable attitudes towards, in hopes that consumers will transfer their positive advertisement attitude to a positive brand attitude. Mitchell and Olson (1981) give insight into the potential disconnect that occurs in this study through their research on the formation of brand attitude. In their study, the researchers found that advertisement attitude directly influences brand attitude, so if consumers feel favorably about an advertisement, this positive attitude usually influences the consumer feel favorably about the brand. But in some situations, a disconnect occurs when the consumer feels negatively about the product being advertised. In the current study, respondents were exposed to soda brand ads, which could have caused the disconnect between a positive advertisement attitude and a negative brand attitude, because according to research, millennial soda consumption is down because they prefer healthier alternatives (Mintel, 2017). This attitude

contradiction is insightful for brands interested in engaging environmental brand activism through green advertising. Even if a brand is environmentally responsible, it should be wary of engaging in environmental brand activism through advertising towards consumers who have a growing dislike for the product type, because according to this study's findings, it likely will not improve their brand attitudes, which could waste advertising spending. Additionally, the disconnect occurring could be due to the consumer's perception that the brand is being inauthentic. As reviewed earlier, inauthenticity can lead to a negative brand perception, which aligns with negative attitudes towards the brand (Correa et al., 2017). Similar experiments need to be conducted with different product types and brands that explicitly have negative reputations and positive reputations in order to confirm the roles that product and brand authenticity play in influencing behavior through environmental brand activism advertising.

The most important finding from this study is that environmental brand activism in the form of green advertising can inspire consumers to feel stronger intentions to engage in green purchasing and recycling after exposure. This finding connects with previous literature that suggests environmental advertising can increase consumers environmental behavior intentions (Ankit and Mayur, 2013; Chemika et al., 2015; Haytko and Matulich, 2008; Khase et al., 2015). In this experiment, the results indicate significant behavior change intentions after only one exposure to the advertisement. This is impressive because usually, brands show advertisements multiple times in order to induce intentions for a behavior change. Environmental brand activism in the form of green advertising caused the behavior intention to increase after only one exposure, which could suggest that this is a powerful tool to initiate behavior change regarding the environment, and could potentially save advertiser's money, because consumers may not

have to see environmental brand activism advertisements as many times as other types of advertisements in order to experience a change in behavior intentions.

### **Conclusion**

This study produced multiple insights into environmental brand activism, American millennial environmental behavior, gender, and environmental knowledge. One key findings is that environmental brand activism as advertising could increase American millennial's environmental consumer behavioral intentions after one ad exposure. Another interesting finding is that respondents felt positive attitudes towards the environmental brand activism advertisements but felt negative attitudes as a whole towards the brands, which could be due to negative product category associations or inauthentic brand perceptions.

The study's primary limitation is its inability to generalize the results because this is the first study on environmental brand activism ad exposure and the population is not representative of the complete, American millennial demographic. Another limitation was the study's small sample size with an uneven distribution of women and men, which likely contributed to only a few statistically significant results. Furthermore, the researchers had less than a year to research, design, and conduct the study, and a minimum budget, which limited the study.

Overall, the study's main implication is that the environmental brand activism message resulted in favorable attitudes towards the advertisement but not the brand. In order to better understand this implication, more research is needed to understand this disconnect with a large sample size that contains an even gender distribution, to increase the chances of yielding statistically significant findings. Furthermore, this is the first study on environmental brand activism, and there is a lot more to learn about this type of communications.



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# Office of Research Integrity

UNIVERSITY OF COLORADO **BOULDER**

**INSTITUTIONAL REVIEW BOARD**

**Institutional Review Board**

**563 UCB**

**Boulder, CO 80309**

**Phone: 303.735.3702**

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## APPROVAL

24-Jan-2018

Dear Samantha Elkan,

On **24-Jan-2018** the IRB reviewed the following protocol:

Type of Submission:	Initial Application
Review Category:	Expedited - Category 7
Title:	The Influence of Environmental Brand Activism on Green Purchasing and Recycling
Investigator:	Elkan, Samantha
Protocol #:	17-0715
Funding:	None
Documents Approved:	Print Ads Located in Survey; Email to Professors / Recruitment Letter; Recruit Facebook Post for CU FB Groups; Recruitment Email from Professors to Students; Survey (24Jan18); 17-0715 Consent Form (24Jan18); 17-0715 Protocol (24Jan18);
Documents Reviewed:	Protocol; HRP-211: FORM - Initial Application v8;

The IRB approved the protocol from **24-Jan-2018** to **23-Jan-2019** inclusive.

Before **24-Dec-2018**, you are to submit a Continuing Review and required attachments to request continuing approval or closure. This protocol will expire if continuing review approval is not granted before **23-Jan-2019**.

Click the link to find the approved documents for this protocol: [Summary Page](#) Use copies of these documents to conduct your research.

In conducting this protocol you must follow the requirements listed in the [INVESTIGATOR MANUAL \(HRP-103\)](#).

Sincerely,

Douglas Grafel

IRB Admin Review Coordinator

Institutional Review Board

## Qualtrics Survey

### Introduction

Dear CU Student,

Thank you for agreeing to participate in this online survey on the consumption patterns of college students. This research is being conducted by undergraduate student, Sami Elkan, at the University of Colorado Boulder.

If you decide to participate, you will be asked to answer a series of multiple choice questions. You will also provide your demographic information. The entire survey should take about six minutes to complete. You may opt out of the experiment at any time.

There are no known major risks or discomforts associated with this research, and by completing the survey, you are agreeing to participate in the research. If you have any questions at any time about the study or procedures, you may contact Sami Elkan by email at [samantha.elkan@colorado.edu](mailto:samantha.elkan@colorado.edu). Questions or concerns about your rights as a research participant should be directed to the Human Research and Institutional Review Board of the University of Colorado Boulder at [303-735-3702](tel:303-735-3702). You may also ask questions, make suggestions, or file complaints and concerns through the email at [irbadmin@colorado.edu](mailto:irbadmin@colorado.edu).

The data from this study will be anonymous. Your name will in no way be connected with the responses you provide. If you provide your email address because you'd like to enter for a chance to win a \$20 Amazon gift card, your email will be removed before the data is looked at.

If you have any questions or concerns with the study and would like to talk to someone other than the researcher, contact the University of Colorado's Office of Human Research and Campus Institutional Review Board at [303-735-3702](tel:303-735-3702).

If you have read the above information and would like to participate in the study, please press the "Next" button. By clicking the "Next" button you also accept that you are 18 years or older.

### Section 1

**Please tell us how you feel about each statement.**

1. I avoid buying products that are potentially harmful to the environment.
  - a. Strongly Agree
  - b. Agree
  - c. Neutral
  - d. Disagree
  - e. Strongly Disagree
  
2. I have changed my principal products for ecological reasons.
  - a. Strongly Agree
  - b. Agree
  - c. Neutral



- d. Disagree
  - e. Strongly Disagree
3. When I have to choose between two similar products, I choose the one that is less harmful to the environment.
- a. Strongly Agree
  - b. Agree
  - c. Neutral
  - d. Disagree
  - e. Strongly Disagree
4. I make a special effort to buy paper and plastic products that are made from recycled materials.
- a. Strongly Agree
  - b. Agree
  - c. Neutral
  - d. Disagree
  - e. Strongly Disagree
5. I do not consider environmental issues when making a purchase.
- a. Strongly Agree
  - b. Agree
  - c. Neutral
  - d. Disagree
  - e. Strongly Disagree
6. I dispose of empty food and beverage packages in an environmentally-friendly way.
- a. Strongly Agree
  - b. Agree
  - c. Neutral
  - d. Disagree
  - e. Strongly Disagree
7. When deciding how I will dispose of food or beverage products, I choose the eco-friendlier disposal option.
- a. Strongly Agree
  - b. Agree
  - c. Neutral
  - d. Disagree
  - e. Strongly Disagree
8. When it's time to get rid of a can, I throw it in the bin that is closest to you, regardless if its recyclables or landfill.
- a. Strongly Agree
  - b. Agree
  - c. Neutral

- d. Disagree
  - e. Strongly Disagree
9. I do not recycle at home.
- a. Strongly Agree
  - b. Agree
  - c. Neutral
  - d. Disagree
  - e. Strongly Disagree
10. When out with friends, I will throw my recyclable can in the landfill bin if I see my friends doing it.
- a. Strongly Agree
  - b. Agree
  - c. Neutral
  - d. Disagree
  - e. Strongly Disagree

**DISPLAY 1 of 4**  
**ADVERTISEMENTS**  
**(ads included in other**  
**document due to size)**

**How do you feel about this advertisement?**

1. This ad is good.
  - a. Strongly Agree
  - b. Agree
  - c. Neutral
  - d. Disagree
  - e. Strongly Disagree
  
2. This ad is bad.
  - a. Strongly Agree
  - b. Agree
  - c. Neutral
  - d. Disagree
  - e. Strongly Disagree
  
3. This ad is cool.
  - a. Strongly Agree
  - b. Agree
  - c. Neutral
  - d. Disagree
  - e. Strongly Disagree

4. This ad is annoying.
  - a. Strongly Agree
  - b. Agree
  - c. Neutral
  - d. Disagree
  - e. Strongly Disagree
  
5. This ad is credible.
  - a. Strongly Agree
  - b. Agree
  - c. Neutral
  - d. Disagree
  - e. Strongly Disagree
  
6. This ad is an example of environmental brand activism.
  - a. Strongly Agree
  - b. Agree
  - c. Neutral
  - d. Disagree
  - e. Strongly Disagree

**How do you feel about this brand?**

1. This brand is good.
  - a. Strongly Agree
  - b. Agree
  - c. Neutral
  - d. Disagree
  - e. Strongly Disagree
  
2. This brand is bad.
  - a. Strongly Agree
  - b. Agree
  - c. Neutral
  - d. Disagree
  - e. Strongly Disagree
  
3. This brand is cool.
  - a. Strongly Agree
  - b. Agree
  - c. Neutral
  - d. Disagree
  - e. Strongly Disagree

4. This brand is annoying.
  - a. Strongly Agree
  - b. Agree
  - c. Neutral
  - d. Disagree
  - e. Strongly Disagree
  
5. This brand is credible.
  - a. Strongly Agree
  - b. Agree
  - c. Neutral
  - d. Disagree
  - e. Strongly Disagree
  
6. This brand is engaging in environmental brand activism.
  - a. Strongly Agree
  - b. Agree
  - c. Neutral
  - d. Disagree
  - e. Strongly Disagree
  
7. This brand is sustainable.
  - a. Strongly Agree
  - b. Agree
  - c. Neutral
  - d. Disagree
  - e. Strongly Disagree
  
8. This brand is eco-friendly.
  - a. Strongly Agree
  - b. Agree
  - c. Neutral
  - d. Disagree
  - e. Strongly Disagree
  
9. This brand probably gives back to society and the earth.
  - a. Strongly Agree
  - b. Agree
  - c. Neutral
  - d. Disagree
  - e. Strongly Disagree

### Section 3

1. Biodiversity is the...
  - a. Number of living species (including bacteria)
  - b. Natural variety of biological matter (animals, plants and microorganisms)
  - c. Cultural diversity based on the location of ecosystems
  - d. Variety of products able to be biologically absorbed in ecosystems
  
2. The concept of "ecological footprints" refers to a measure of...
  - a. Benefits from promoting walking as a transport alternative
  - b. Costs from excessive consumption of natural resources
  - c. Production capacity of specific resources per capita
  - d. Consumption based on the use of natural resources per capita
  
3. Sustainable development is usually defined as, "meeting the needs of present generations without..."
  - a. Curtailing growth rates
  - b. reducing access to natural resources by future generations
  - c. causing shareholders to discount future investments
  - d. compromising the ability of future generations to meet their own needs
  
4. Why has the disposal of wastes caused problems for freshwater and marine ecosystems?
  - a. All ecosystems have a limited capacity to absorb waste
  - b. Neither type of ecosystem can tolerate industrial, waste
  - c. Both types of ecosystems are too old to adapt their "sink" capacity
  - d. Scientists have not yet solved the "limited sink" problem
  
5. In industrialized countries (e.g., North America and Europe), the largest environmental impact from ground transport results from?
  - a. Cars with four people driving on long recreational trips
  - b. Full commuter buses and trains
  - c. Heavy trucks distributing goods
  - d. Unaccompanied drivers traveling to and from work
  
6. What is the main greenhouse gas and its cause?
  - a. Carbon dioxide from burning fossil fuels
  - b. Methane from coal mining
  - c. Methane from agricultural livestock
  - d. Nitrous oxide from burning fossil fuels
  
7. In Boulder County, which is the most eco-friendly option to dispose of scrap food?
  - a. Landfill
  - b. Recycle
  - c. Compost
  - d. All

8. Boulder County plans to achieve “Zero Waste” by which year?
  - a. 2020
  - b. 2025
  - c. 2030
  - d. 2035
  
9. Which items do Boulder grocery stores charge an extra 10 cents for?
  - a. Plastic water bottles
  - b. Lighters and matches
  - c. Plastic bags and brown paper bags
  - d. Styrofoam containers

#### Section 4

**Please tell us how you feel about each statement.**

1. In the future, I will avoid purchasing beverages in packaging that cannot be recycled.
  - a. Strongly Agree
  - b. Agree
  - c. Neutral
  - d. Disagree
  - e. Strongly Disagree
  
2. In the future, I will purchase eco-friendly cleaning products.
  - a. Strongly Agree
  - b. Agree
  - c. Neutral
  - d. Disagree
  - e. Strongly Disagree
  
3. In the future, I will NOT make a special effort to buy paper and plastic products that are made from recycled materials.
  - a. Strongly Agree
  - b. Agree
  - c. Neutral
  - d. Disagree
  - e. Strongly Disagree
  
4. In the future, I will NOT consider environmental problems when making purchases.
  - a. Strongly Agree
  - b. Agree
  - c. Neutral
  - d. Disagree
  - e. Strongly Disagree
  
5. In the future, when choosing between two similar products, I will choose the one that is less harmful to the environment.
  - a. Strongly Agree
  - b. Agree
  - c. Neutral
  - d. Disagree
  - e. Strongly Disagree
  
6. In the future, I will not dispose of empty food and beverage packages in an environmentally-friendly way.
  - a. Strongly Agree
  - b. Agree
  - c. Neutral
  - d. Disagree
  - e. Strongly Disagree



7. In the future, I will choose the eco-friendlier disposal option when disposing of products.
  - a. Strongly Agree
  - b. Agree
  - c. Neutral
  - d. Disagree
  - e. Strongly Disagree
  
8. When it's time to get rid of a can, I will throw it in the bin that is closest to me, regardless if its recyclables or landfill bin.
  - a. Strongly Agree
  - b. Agree
  - c. Neutral
  - d. Disagree
  - e. Strongly Disagree
  
9. In the future, I will not recycle at home.
  - a. Strongly Agree
  - b. Agree
  - c. Neutral
  - d. Disagree
  - e. Strongly Disagree
  
10. In the future, when out with friends, I will recycle my recyclable can even if I see my friends throwing theirs in the landfill.
  - a. Strongly Agree
  - b. Agree
  - c. Neutral
  - d. Disagree
  - e. Strongly Disagree

## Section 5

1. Please select your gender
  - a. Man
  - b. Woman
  - c. Non-binary
  - d. Prefer not to say
  
2. Please select your completed level of education
  - a. High school
  - b. Currently an undergraduate student
  - c. Bachelors
  - d. Masters
  - e. PhD or terminal degree
  - f. Vocational school
  
3. What year were you born?
  - a. Select year from drop-down
  
4. To what degree do your parents support you financially?
  - a. Completely
  - b. Mostly
  - c. Somewhat
  - d. Barely
  - e. Not at all
  
5. Do you feel financially stable?
  - a. Strongly Agree
  - b. Agree
  - c. Neutral
  - d. Disagree
  - e. Strongly Disagree
  
6. What is your political affiliation?
  - a. Political affiliation options
  
7. What type of community did you grow up in?
  - a. Urban
  - b. Suburban
  - c. Rural
  
8. While growing up, did your family recycle at home?
  - a. Always
  - b. Often
  - c. Sometimes
  - d. Not often
  - e. Never

9. While growing up, did your family buy eco-friendly alternative products? (ex. Method instead of Windex)
  - a. Always
  - b. Often
  - c. Sometimes
  - d. Not often
  - e. Never

Include additional comments below if you'd like!

- a. Space for comments

## Section 6

### **Important information for all participants:**

This study asked you questions about your consumption behavior, environmental knowledge, and attitude about the advertisement and brand. It also asked you about demographic information.

The researchers are interested in the effect of environmental brand activism in the form of green advertising on the purchasing and recycling decisions of college students. Environmental brand activism can be defined as a company taking a stand on a social issue and using its brand platform to speak out about the issue. The researchers are also interested in how gender, environmental knowledge, brand attitude and advertisement attitude play a role in the study. All participants were asked to respond to the same questions, but not all participants observed the same advertisement. There were four different advertisements observed: an advertisement of a known brand with green messaging, an advertisement of a known brand with generic messaging, an advertisement of an unknown brand with green messaging, an advertisement of an unknown brand with generic messaging. Participants were not previously informed on the experiment in detail because drawing attention to the idea that they would be exposed to advertisements could have hinted that these were testing variables, and knowledge of this would have produced different results.

You have the option to ask questions about any of the information that you saw in the study and if you would like, you are still able to withdraw from the study and have your data removed.

By clicking "Next" below, you are stating that you understand the above information.

## Section 7

Thank you for participating in this study. If you have any questions, please contact Sami Elkan at [samantha.elkan@colorado.edu](mailto:samantha.elkan@colorado.edu)



**IN A YEAR, RECYCLING ALUMINUM REDUCES  
GREENHOUSE GASES BY AS MUCH AS  
TAKING 19.3 MILLION CARS OFF THE ROAD.**

So you can breathe easier knowing that  
your grandchildren will, too.

*Coca-Cola*



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**REFRESH YOUR ROUTINE.  
CHOOSE COCA COLA.**

*Coca-Cola*



**REFRESH YOUR ROUTINE.  
CHOOSE DIET SPRITZER.**

