Toxic Beauty: A Discourse Analysis of *Toxic Beauty* (2019) and Associated Consumer Survey On Concerns of Environmental Exposures in Health and Beauty Products



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A Senior Comprehensive Project

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This work is mine unless otherwise cited.

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Abstract

Extant research has examined factors that may influence green consumption including demographic factors, personal values, behavioral factors, product factors, personal capabilities, and factors within the retail environment (Testa et al., 2021). The purpose of the present study was to expand understanding of "green" products and their users to the trend of "clean" health and beauty products and their users through both conducting a discourse analysis of the film *Toxic Beauty* as well as conducting a consumer survey. The discourse analysis found that the film *Toxic Beauty* challenges the consumer to consider larger cultural expectations on health and beauty and how that correlates with the products women, especially in the United States are expected to utilize. At the same time, however, the film perpetuates neoliberal ideas of personal accountability and perfect consumption by endorsing the idea that consuming the right, "clean" products will prevent illness from chemical exposure, even if in other parts of the documentary, they find prevention to be impossible on an individual basis. Additionally, a survey was conducted to assess attitudes towards clean cosmetics, as well as measuring Big 5 personality traits, self-efficacy scores, and demographic traits. Thirty one female-identifying participants completed the survey through the online platform Prolific. The findings indicated no significant associations between CCAS scores and any of the Big Five Personality Traits, CCAS scores and Self-Efficacy, nor any associations between demographic factors of age, income, or educational attainment and CCAS scores.

Keywords: clean cosmetics, self-efficacy, consumer survey, green products, Big Five Personality traits, *Toxic Beauty* (2019), documentary analysis, discourse analysis

Toxic Beauty: A Discourse Analysis of *Toxic Beauty* (2019) and Associated Consumer Survey On Concerns of Environmental Exposures in Health and Beauty Products

In the health and beauty world, "clean" is all the rage. "Clean" can be used to describe a variety of health and lifestyle choices such as "clean" eating or as will be further discussed "clean" cosmetics. The central idea of "clean" in this context, is generally to use few, simple ingredients within products to lower the risk of potential exposure to harmful ingredients that may cause ill health effects. The idea of "better for you" or clean product labels can be found across categories of personal care products including but not limited to cosmetics, shampoos, deodorants, and toothpaste. The "clean" beauty market is forecast to reach 15.3 billion dollars in worldwide sales by the year 2028 (Shahbandeh, 2023).

The interest in "clean" alternatives to conventional health and beauty products may be rooted in the fear of how ingredients that are currently available in conventional products may cause detrimental health effects, especially given the relatively lax regulatory environment on health and beauty products within the United States. The documentary film, *Toxic Beauty* (2019), investigates and critiques the current governmental regulatory process of cosmetics within the United States, particularly focusing on the Johnson and Johnson baby powder lawsuit (Ellis, 2019). The film was produced by Canadian director and former Olympian, Phyllis Ellis and was produced by White Pine Pictures (Ellis, 2019). Phyllis Ellis was born in Ontario, Canada in November 1959 and is an alumna of the University of Toronto ("Phyllis Ellis", 2013; Damjanovic, 2022). In her Olympic Career, Ellis competed for the Canadian women's field hockey team in the Summer 1984 Olympics (Damjanovic, 2022). Ellis is described as a filmmaker who particularly focuses on "telling stories empowering women`s voices around the world" ("Phyllis Ellis", 2022, p.1). After the conclusion of her Olympic career, Ellis became

involved in filmmaking, acting, and producing. Ellis described her interest in film as focused on “social and political issues that center on the experiences of women " (Damjanovic, 2022, p.1). Since directing *Toxic Beauty*, Ellis has returned to the area of women's experiences in sports with her film *Category: Woman*, investigating policies related to medical privacy and sex verification in women's sports (Damjanovic, 202).

Part of the concerns about the safety of health and beauty products come amid ongoing lawsuits against Johnson & Johnson for the use of talc in baby powder, causing cases of reproductive cancers for consumers. The talc-containing product was once thought to be safe enough to use on infants, making the carcinogenic nature of the product surprising. Johnson & Johnson was once, and perhaps still is a widely trusted personal care brand amongst Americans. As recently as 2011, the company was ranked #1 by Forbes for consumer brand perception (Rooney, 2011). Yet, despite having a high degree of brand recognition and trust, even a product like Johnson and Johnson`s talc-based products became known to be unsafe. Yet, the issue of product safety is not limited to Johnson and Johnson products and in fact may extend to other products, especially amongst those currently available in the United States. As compared to other nations, the United States bans far fewer ingredients in personal care and food products. The United States has banned only 11 cosmetic product ingredients for cosmetics while the EU has banned over 1,300 ingredients due to health concerns (Milman, 2019). With the lack of regulations on personal care products consumers, especially in the United States, must choose to either do the sorting for “healthy” or “clean” products themselves or not consider the issue at all, either by choice or out of lack of information or interest.

In the film, *Toxic Beauty*, it is suggested that consumers might be able to transition into using “clean” alternatives to their typical health and beauty products (Ellis, 2019). Yet, the idea

of what makes a product “clean” is often poorly understood or defined. The term “clean” has no set definition legally. To some individuals, the term clean indicates that a product contains less than five ingredients or does not contain ingredients that are hard to pronounce. To other people, a label with keywords like “clean” or “natural” might mean that a product is minimally processed, or free from specific chemical additives (Negowetti et al., 2022). Additionally, while in the documentary, *Toxic Beauty*, clean beauty products are presented as alternatives to conventional products, not all products may neatly fit within these two categories (Ellis, 2019). For example, perhaps a product sold at a mass retailer like Walmart contains clean ingredients, would this be classified as a clean product or a conventional product? Similarly, a product sold at a small, local retailer might not guarantee a product with less toxic ingredients. Generally, given the ambiguity of the term “clean” or “natural”, it could be difficult for the consumer to quickly determine what products are “clean” and if these products in fact offer superior benefits to health.. While limited research is available on perceptions of the term “clean” in health and beauty, research on the term “natural” has found that only 47% of American consumers feel that “natural” is a trustworthy term (Negowetti, 2013). Consumers are accurate in having these hesitations, as the term natural, much like clean, does not have a strict legal definition (Negowetti, 2013).

Heuristics and Buying Decisions

Even for the consumer interested and willing to pay a premium for “clean” products, it can be difficult to thoroughly evaluate each product within the retail setting. In addition to considering the health information about the health and safety of products, consumers are also considering various aspects of the product found within the retail environment such as price and appearance (Asioli, et al., 2017).

Within a retail environment, situational factors drive decision-making such as time available and the physical environment of the retail store and how it is set up (Asioli, et al., 2017). While consumers may be concerned with exposures to harmful chemicals in products, due to the time limitations and the overwhelming amount of information available in a retail environment, heuristics or mental shortcuts tend to be utilized to make decisions on products. Oftentimes, these mental shortcuts involve looking at the visual cues, such as color and appearance found on the front of packaging labels (Asioli, et al., 2017). One such type of heuristic consumers may use is looking for keywords on packaging. One common example is looking for cues like words or even colors that indicate that a product is "natural" as a result of the natural-is-better-bias (Meier, et al., 2019). The natural-is-better-bias finds that consumers tend to perceive natural products as superior to synthetic products and perceive natural products to be superior in several ways including being safer, less harmful, and more effective (Meier, et al., 2019). In one study, the information provided on the front of food packaging indicating a product was "natural" led consumers to believe the product was more healthy and lower in calories, even though the product had the same ingredients as another package not bearing the "natural label" (Skubisz, 2017).

Consumers may quickly assess key words on the front of the packaging to make determinants about the product qualities and whether they should buy it. At home, consumers might expend more significant cognitive effort in reading the back of product labels, but might still rely on heuristics like familiarity with ingredients to determine product naturalness (Asioli, et al., 2017). However, buying decisions within the store environment are often quick and can easily be influenced by information that might suggest but not confirm that the product has certain qualities.

Green Gap and Potential Connections to a "Clean Gap"

There is a phenomenon within environmental sustainability that finds that while 83% of people are concerned about the environment, only 16% of people act on these concerns in a meaningful way known as the "green gap" (Gleim et al., 2014). While this concept of an attitude-behavior gap can found in studies of green product consumption, this phenomenon is also applicable to generally studying attitudes as compared to behaviors within psychology and has been applied to studying behaviors like seatbelt use and adherence to Covid-19 policies (Abreu Romero, et al., 2023; Mittal, 1988). The concept of an attitude-behavior gap was explained by Ajzen in the Theory of Planned Behavior, and finds a gap may occur between attitude and behavior based on internal and external limitations on the behavior (Abreu Romero, et al., 2023; Ajzen, 1991). The Theory of Planned Behavior posits that whether a behavior is achieved is moderated by motivation (intention) and ability (perceived behavioral control) (Ajzen, 1991). In other words, those who will achieve a behavior have a strong intention or motivation to complete the task and will also feel that it is within their power to do so (Ajzen, 1991). However, some scholars also point out flaws in Ajzen's theory. Specifically regarding environmental product choice, some recent studies have found that consumers may present both a favorable attitude towards environmentally friendly products and the intention to make more environmentally friendly choices, yet still do not behave in a way that is environmentally friendly (Duong, 2021; ElHaffar, et al., 2020).

Given the gap between attitude and behavior in environmentally friendly consumption research, it is of interest to psychologists to understand why the gap forms between those concerned about the environment as opposed to those who act on it through their habits and buying behaviors. Recent research has continued to support the concept of a "green gap", and in

more recent years a major focus of research has been strategies to narrow the attitude-behavior gap in regards to green products (Yadav et al., 2024).

Specifically regarding the green gap, it is of interest to researchers looking to increase sustainable behaviors to understand who these 16% are who act on their concerns, and what differentiates them from the majority with concerns but without substantial action. Some factors that may fuel the "green gap" may include attitudes about the products themselves. Consumers generally tend to feel that environmentally friendly products are lower in quality, less accessible, and lack the brand loyalty they have already formed to conventional products (Gleim et al., 2014). Based on these findings, it seems that while a majority of consumers may have some concerns about the environment, these concerns are not enough to motivate them to buy a product that they deem is inferior or less accessible than the conventional product alternative.

Big Five Traits and Green Consumption

In addition to studying the Theory of Planned Behavior and consumer perceptions of green products, some green consumption research has begun to also focus on the personality traits that may correlate with green consumption. Specifically, some studies have begun to investigate how key personality traits described in the Big Five personality scale may correlate green consumption behavior (Duong, 2021; Sun et al., 2018). The concept of a five-factor model to describe personality is generally credited to American psychologist Lewis Goldberg, and continues to be a popular and empirically supported method to access general personality traits (Chmielewski & Morgan, 2013; Goldberg, 1993). The "Big Five" sometimes referred to as the OCEAN model refers to five main traits: openness, conscientiousness, extraversion, agreeableness, and neuroticism. Individuals are accessed according to each trait, and may demonstrate higher or lower scores on each trait.

The trait of openness, sometimes called “openness to experience” refers to a person's inquisitiveness, creative nature, and general favoring of newness or new experiences (Chmielewski & Morgan, 2013; Duong, 2021). In consideration of green product consumption, it is thought that higher levels of openness may be associated with a greater willingness to try new or unconventional products. One study on personality traits found that openness was associated with a greater pro-environmental attitude (Markowitz et al., 2012).

Conscientiousness is a trait that is associated with being disciplined in working towards goals as well as being strict when it comes to following rules and principles (Chmielewski & Morgan, 2013). In relation to environmental concerns, it is thought that conscientiousness may make people more future oriented as well as being action oriented and focused towards environmentally friendly behaviors (Duong, 2021). Limited research is available reporting significant relationships between conscientiousness and environmental behaviors. As described in the background research of Duong, one study from found no associations between conscientiousness and environmentalism, whereas in another study finding association between conscientiousness and environmental engagement but not environmentally friendly behavioral associations (Duong, 2021; Fraj & Martinez, 2006; Milfont & Sibley, 2012).

Extraversion is the next trait in the Big Five personality scale. Those high in extroversion tend to exhibit traits of being sociable, lively, assertive, fun-loving, and optimistic (Chmielewski & Morgan, 2013). It is unclear what the direct link between extraversion and greater interest in environmental causes might be. One theory is that extraversion might be linked to greater support of environmental causes if there is a socially rewarding aspect to the behavior that involves interacting with others (Soutter & Mottus, 2021). Similarly to conscientiousness, one study found an association between environmental engagement and extraversion (Milfont &

Sibley, 2012). More recent research however, finds that only subscale items for extraversion of activity level and cheerfulness were associated with pro-environmental behaviors which included behaviors such as spending time outdoors with others, but this behavior was not with associated with higher pro-environmental attitudes (Soutter & Mottus, 2021).

Agreeableness is another trait of the Big Five that refers to the ability of an individual to get along with others and is associated with characteristics such as being warm, prosocial, helpful, and empathic (Chmielewski & Morgan, 2013). It is thought that agreeableness might be associated with pro-environmental behaviors as a reflection of good citizenship (Sun et al., 2018). It is also thought that agreeable individuals are more attuned to paying attention to the needs of other people as well as the environment (Wang, et al., 2021). However, the results on the associations between agreeableness and environmental behaviors have been mixed. While some studies find a significant negative correlation between agreeableness and environmentally friendly behaviors, other studies find the opposite indicating a positive correlation with environmentally friendly behaviors (Markowitz et al., 2012; Terrier et al., 2016). More recent research finds that agreeableness was positively associated with both pro-environmental attitudes and intention, but did not measure behaviors (Wang et al., 2021).

Finally, the trait of neuroticism refers to the tendency of feeling negative emotions like sadness, anxiety, and anger, as well as feeling distress or negative thoughts of worry and self-doubt (Chmielewski & Morgan, 2013). The link between neuroticism and environmental behaviors is not well established. Conflicting studies have found positive associations between neuroticism and pro-environmental behaviors while negative associations between neuroticism and pro-environmental behaviors have also been found (Akhtar, 2019; Wang et al., 2021)

Within the 2021 study by Duong that is referenced, the findings found some significant associations between Big Five personality traits and consumption of green products, while other traits were not found to be significant (Duong, 2021). Agreeableness was found to be positively associated with the consumption of green products and was the strongest association found in the Big Five (Duong, 2021). Conscientiousness was found to not be significantly related to the purchase intention of green products, but higher levels of conscientiousness were associated with positive attitudes toward environmentally friendly products (Duong, 2021). Extraversion was not found to be correlated with intention, consumption, nor attitudes (Duong, 2021). Openness to experience was found to be negatively associated with attitude towards green products and was not statistically significant in purchase intention. However, the authors note that this may be a culturally specific finding as individuals within Vietnam and other nearby Asian countries may be "hesitant to accept novelty and adapt to unusual experiences" (Duong, 2021, p.1138). Finally, Neuroticism was found to be negatively associated with green purchase intentions, which the researchers suspect may indicate that anxious and distressed consumers may be less likely to want to adopt new environmentally friendly practices (Duong, 2021).

When assessing the links between clean products and Big Five personality traits, due to the mixed findings for several of the Big Five personality traits associated with pro-environmental intentions and behaviors, the limited research within the US on Big Five traits and green or clean consumption, as well as some of the differences that may exist between green and clean consumers, it is unclear what traits may correlate with higher interest in clean cosmetics. However, due to some of the aforementioned research finding some distinct traits amongst consumers more interested in green consumption, it may also be true that "clean"

consumers may exhibit some distinct Big Five characteristics from consumers less interested in clean products.

Consumer Self-Efficacy

In accordance with the Theory of Planned Behavior, it is thought that perceived ability or behavioral control is one aspect that dictates whether a behavior is completed (Ajzen, 1991). One trait that is often associated with the perceived ability to complete goals is self-efficacy. By definition perceived self-efficacy is "concerned with judgments of how well one can execute courses of action required to deal with prospective situations" (Bandura, 1982, p.122). Self-efficacy is commonly studied within social learning theory and is positively related to completing tasks and reaching goals (Sharma & Dayal, 2017). Past research has found a positive link between scales of self-efficacy and pro-environmentalism (Sharma & Dayal, 2017). In this way, self-efficacy may also be a viable theory of what bridges the "green gap" between supporters and consumers. Those with a higher level of self-efficacy tend to believe more strongly that their actions will contribute to the solution of problems, including involving the environment. One study found that those with higher levels of green self-efficacy, which specifically refers to believing that through purchasing decisions one has the ability to help solve environmental problems, was positively correlated with higher rates of green purchasing behavior (Sh.Amad, 2022). In relation to clean consumption, it might make sense that those who feel higher levels of self-efficacy might generally feel more able to achieve their goal of reducing levels of chemicals in products through their consumption habits.

Demographics and Green Consumption

Little research currently exists on the topic of "clean" consumers including if "clean" consumers are in fact a distinct group and exhibit distinct demographic characteristics from consumers less interested in buying "clean" health and beauty products. Even for the category of green consumption results are somewhat limited on sociodemographic traits and green consumers. A systematic review of 97 papers from 2015 to 2020 on green purchasing decisions includes some studies referring to demographic characteristics differences of those more interested in green consumption (Zhang & Dong, 2020). In regards to age, there is some evidence from one study on purchase intention of electric cars that middle age people (age 35-49) have the highest purchase intention of electric vehicles, while young people aged 19 or younger, have the least intention to purchase green cars (Habich-Sobiegalla, 2017; Zhang & Dong, 2020). It is thought that middle aged consumers as opposed to younger consumers may be more attuned to practical aspects related to the purchase such as product cost and product quality (Zhang & Dong, 2020).

Within the area of education, some studies referenced within the systemic review find education to be correlated with a greater willingness to purchase green products. (Cai et al., 2017; Chekima et al., 2016; Zhang & Dong, 2020). One other study referenced however, found no relationship between educational level and purchasing decisions of green products (Fleith et al., 2016). It is speculated however, that in some studies the educational attainment level of participants may have been high enough in which all participants would have reached a level in which additional educational attainment was no longer relevant to green purchasing (Zhang & Dong, 2020). In relation to income, a study on general interest in green consumption found that consumers with better financial circumstances were much more likely to intend to purchase

green products (Witek & Kuzniar, 2020). In relation to organic food consumption, which may present similarities to "clean" consumption in relation to concerns of environmental exposures, it is also found that organic consumers as a whole tend to be wealthier and also more well educated than consumers who buy organic products less frequently (Gundala & Singh, 2021).

With the aforementioned research that indicates that there might be some connections to demographic factors of age, education, and income and green consumption, it is possible that there could be potential links between demographic factors and clean consumption. Additionally, as much as organic products, as clean products often come at a higher price point, there could potentially be connections between educational attainment and income as is found in organic consumer demographics.

TOXIC BEAUTY: DISCOURSE ANALYSIS

For American consumers who have doubts about the substances and chemicals found in everyday household products and foods, a market for "clean" products has emerged. To avoid harmful ingredients, some consumers have elected to seek out "clean" or natural alternatives to conventional products. This clean cosmetics trend can be seen reflected by major brands, such as Allure`s "Clean Best of Beauty " seal or Sephora`s "Clean at Sephora" (Middleton, 2019; Chitrakorn, 2023). Major brands such as Sephora now advertise select products as earning a "clean" label. Some consumers have even resorted to scanning individual product labels on apps that allow consumers to read a report on the risks associated with each product ingredient. In more recent years, apps such as Yuka, Quel Cosmetics, and BuyorNot have allowed consumers to scan products to find more information on the health risks (Adeline, 2021).Some of this hesitancy over the safety of household products in the United States may have been renewed in recent years in light of ongoing lawsuits against Johnson and Johnson over allegations of their

famous Johnson and Johnson talcum products, namely baby powder being linked to reproductive cancers in women (Simon, 2024). In addition to the risks of talcum powder, health concerns over the use of substances like formaldehyde, parabens, phthalates, aluminum, and fragrance in person care products, to name just a few ingredients, have become areas of concern for consumers and scientists alike (Darbre, 2023). With Johnson and Johnson's baby powder, the product was a staple in many households with a distinct fragrance and perception of being "gentle enough for a baby's bottom" (Rabin & Hsu, 2019, p.1). In 2018, it became publicized that Johnson and Johnson may have known for decades that their products were unsafe (Girion, 2018). Johnson and Johnson systematically denied all allegations that Johnson and Johnson baby powder was unsafe as recently as 2016 writing, "few ingredients have the same demonstrated performance, mildness, and safety profile as cosmetic talc" (Johnson and Johnson, 2016, p.1). By April 2020, amidst thousands of lawsuits by Johnson & Johnson (J&J), the company discontinued sales of talcum-based baby powders in the United States and Canada, with plans to take talcum out of its products globally by 2023 (Simon, 2024).

In the film *Toxic Beauty*, the Johnson and Johnson baby powder trials are described in detail, with particular emphasis on the women affected by reproductive cancers and their struggles to battle a large corporation such as Johnson and Johnson in court. The film ultimately is meant to evoke concern in the viewers and allow them to consider the Johnson and Johnson case as an example of the unknown long-term effects of the cosmetic and personal care products people currently use today. While the issue is presented as something that is meant to be a concern to be aware of, the issue of exposure to harmful ingredients in the cosmetic industry is also presented as an issue that is insurmountable with few wins for the consumer.

The cosmetic industry is often likened to the cigarette industry and is presented as more challenging than the cigarette industry given the number of products that are affected that are essential for daily life. Even experts in the field warn that they cannot protect their own children from the risk (Ellis, 2019). The documentary also points out that this is an issue that has been presented to the government of the United States several times unsuccessfully. Ultimately, the documentary posits that the risks are almost impossible to avoid so the consumer must be particularly clever and watchful of what they consume by investing in "clean" products. Additionally, *Toxic Beauty* challenges the audience to reconsider the larger beauty expectations placed upon women that require the purchase of an extensive list of health and beauty products.While *Toxic Beauty* admonishes the corporate figure of Johnson and Johnson for their role of placing blame on the consumer, ultimately the documentary also supports neoliberal ideas of a "perfect consumer" who is able to self-optimize through the consumption of the "right" products by supporting the idea of clean product consumption as a solution to the larger issue of unregulated chemical exposures in products.

Scientific Information

Many products currently available on the market that are discussed in the documentary such as parabens and phthalates are known to have long-term health effects according to scientists. In more recent years, scientists have been studying the potential effects of endocrine-disrupting chemicals (EDCs) including parabens, phlathates, benzophenones, and bisphenols commonly found in cosmetic and personal care items (Peinado et al, 2020). While there are concerns regarding potential ill health effects, products containing potential endocrine-disrupting chemicals are very commonly found in products, with the Endocrine Society estimating that over 1,000 human-made chemicals may be endocrine disruptors ("US

Department", 2024). Endocrine-disrupting chemicals are a type of exogenous chemical (meaning that they originate from outside the body) that may interfere with hormone action and/or disrupt endocrine function within the body (Wong & Durrani, 2017). Scientists have concerns about the effects of endocrine-disrupting chemicals on human health and development. In particular, there are concerns over the effects of exposure to endocrine-disrupting hormones during important developmental periods of life, including during fetal development, infancy, childhood, and puberty (Wong & Durrani, 2017). Additionally, several factors increase the risk of exposure to endocrine-disrupting chemicals in a pediatric population compared to an adult population. For example, children have thinner skin than adults which may lead to higher absorption of products into the skin (Kearns, et al., 2003). Children also tend to have more behavioral risks of chemical exposure such as swallowing products like toothpaste (Ginsberg & Balk, 2016).

Phthalates are considered to be semi-volatile organic compounds that in addition to being used in personal care products can also be found to be used in paint adhesives, food packaging, and plastics (Yesumanipreethi et al., 2021). In personal care products, diethyl phthalate (DEP) has been detected within products such as perfumes, shampoo, skin toner, makeup remover, foundation, and nail polish remover (Bao et al., 2015). Within research studies, phthalates are linked to decreased IQ, pregnancy loss, hyperactivity, and attention problems (Nicolopoulou-Stamati et al., 2015). Some researchers also believe that environmental toxins such as phthalates may have contributed to the decline in human fertility in recent decades (Yesumanipreethi et al., 2021).

Parabens are a type of preservative that has been used in consumer products since 1923 (Yesumanipreethi et al., 2021). Parabens can be found in products including foundation, eye shadows, powders, mascaras, lipsticks, nail polishes, lotions, sunscreens, cleansers, deodorants,

toothpaste, and hair products (Karpuzoglu et al., 2013). Like phthalates, experts warn that parabens may cause neurobehavioral and reproductive damage to the body (Yesumanipreethi et al., 2021). Research has shown that women, likely due to their use of personal care products, have higher levels of parabens in their urine compared to men (Hendryx & Luo, 2022).

Cultural Expectations on Health and Beauty

To better understand the documentary, it is important to first understand the role of personal care products in American culture. For many people, personal care products are a big part of everyday life and their routines, but the documentary aims to challenge the idea of how much we need to use these products. In a similar way to how anti-smoking campaigns attempted to make cigarettes less and less a part of the cultural norm in the United States in part by banning products in restaurants and bars, the documentary *Toxic Beauty* questions our expectation of using cosmetics and personal care products as a necessary part of our daily life. It seems that in a similar way to cigarette smoking, to change the burden of the chemical risks of cosmetic and personal care products, the documentary proposes that a shift surrounding the norms and expectations of beauty and hygiene in the United States is necessary.

Part of the reason that cosmetic and personal care products are important for everyday life includes the cultural expectations that are especially placed on women and specifically women of color. For some product use, like shampoo, soap, toothpaste, and deodorant, within the United States, these are standard products that we expect other people to use in everyday life to maintain basic hygiene or cleanliness. While there may be other ways to maintain hygiene, not using these products generally would result in a reaction of disgust and would make the other person assume that by not using such products people are not taking care of their bodies, are not mindful of body odor, and might even cause personal judgments of being seen as lazy, unkempt,

disorganized, mentally ill, or impoverished. While there are more extensive grooming standards for some groups including women and people of color, at the most basic level of cleanliness that we expect from all people including clean hair, teeth, and neutral body odor as part of maintaining one`s body and hygiene. It is the dominant view within the United States is that people have the personal responsibility to maintain an odorless appearance through the use of products (Lazakis, 2019). To maintain this odorless or even perfumed standard, the use of fragrance containing products is often needed. For many women featured in the documentary, the use of Johnson and Johnson products came from anxiety over the smell of their bodies and a desire to maintain a neutral, pleasant odor (Ellis, 2019).

For women, expectations of beauty and hygiene are especially amplified. Their specific routines of grooming are often more extensive than for people who identify as male and require more products just to maintain a basic level of appearance. While for men, a bare face is acceptable in practically all settings, for feminine-presenting individuals, a face of makeup is the norm in many settings to create a “put-together” everyday appearance for work and school. For women, everyday makeup looks tend to be targeted towards hiding “flaws”. The flaws that tend to be considered as needing to be corrected or concealed may include features such as undereye bags, pimples, gray hair, and wrinkles; each necessitating products in order to correct the flaw. Additionally, other products exist to highlight specific facial features such as mascara, lipstick, eyeliner, and eyeshadow. Makeup and skincare products may aim to create a more youthful appearance that is also sought after and expected in women. Without using cosmetic products, women may be told that they look sick, tired, or unattractive. In certain industries, such as for flight attendants, makeup may even be a more formalized part of the dress code for women whereas the same is not true for men. Only as recently as 2019 have some airlines loosened these

requirements (Williams, 2019). Women often report negative perceptions when they do not wear makeup including that they may be called “tired” in response to not wearing makeup. Some research indicates that women who put more effort into their grooming, especially in terms of makeup may even outearn women who do not wear makeup (Wong, & Penner, 2016).

In addition to makeup, expected grooming for women is also more extensive for hair, including body hair, skin, and nails. For women, long hair is often seen as more feminine and may require additional grooming and styling products. The expectations of hair care and maintenance are particularly burdensome upon women of color, especially black women and women with curly or coily hair textures. Eurocentric beauty norms within the United States privilege straight hair textures and styles, and emphasize this hair type as the ideal of beauty and professionalism. For white women with straight hair textures even with a long length of hair, a relatively minimal amount of hair styling and maintenance is required in order to conform. For black women especially, natural black hair tends to be negatively perceived as being “unkempt”, “messy”, or “unprofessional” (Carter, 2019). The standards of hair maintenance are therefore elevated for black individuals to create a “neutral” appearance (Carter, 2019). In the workplace, black individuals who wear natural hairstyles regularly face both explicit and implicit discrimination (Carter, 2019). Before the Crown Act as recently as 2022, it was federally legal for discrimination to occur on the basis of hair style or hair texture (Carter, 2019). Expectations on black women often enforce the idea of using products to make hair look as though it is straight in texture. While this process can be done through heat or wigs, chemical straightening agents are also used which can introduce dangerous chemicals into the body. Researchers have found that black women for example are two to three times more likely to develop uterine leiomyomata tumors than white women, which is attributed to the use of hair relaxers or

chemical hair straighteners (Wise et al., 2016). In many parts of the world, women of color are also expected to aspire to a lighter complexion, sometimes also through chemical means in the form of skin-whitening products, which can create health risks. Overall, the burden of personal care and upkeep while significant for all women is specifically heightened for women of color.

Femininity is furthermore associated with a variety of other maintenance routines which require the use of cosmetic and personal care products. Body hair with the exception of hair on the eyebrows, head, and eyelashes is often seen as controversial or unappealing when seen on women. The revulsion to female body hair then necessitates the use of products such as shaving creams, lotions, and depilatories in order to maintain a hairless appearance. The appearance of well-kept nails is also often considered good grooming. Yet, nail care can necessitate a variety of products to use, including acetone polish removers, acrylics, polishes, and gel polishes which all might increase exposure to chemical agents, especially for those who work with these products on a daily basis such as nail technicians. Perfumes and body sprays can often be part of a grooming routine, whereas fragrances may present additional exposure to chemical agents.

Neoliberalism and Consumer Blame

To understand the social and cultural environment in which the documentary takes place, it is necessary to understand the concept of neoliberalism within the United States. In George Monbiot`s, *Out of the Wreckage: A New Politics for an Age of Crisis*, he describes competition and individualism as the most highly regarded values in 21st-century America (Monbiot, 2018). Instead of focusing on collaboration and connection, each of us are encouraged to become the most wealthy and powerful by competing against each other and accomplishing our goals on our own. The narratives that we prioritize, emphasize stories of people as individuals and how they solved their problems on their own. Within neoliberalism, the consumption of products is also

something that we are taught to continuously seek out (Monbiot, 2018). Personal responsibility is also a large part of a neoliberal framework. As described in Julie Wilson`s *Neoliberalism*, within a neoliberal society each individual must always be in command of caring for oneself and must "take personal responsibility for our lives and health in the market" (Wilson, 2018, p.151). Within the context of the documentary, it is notable to understand the thought process of neoliberalism in guiding the push towards selecting the right, "clean" products or discontinuing personal care product use as opposed to advocating for more regulations on the cosmetic industry. Within neoliberalism, it is understood that the maintenance of oneself and one's own body is an individual responsibility and for the most part, if someone becomes ill from buying the wrong product, inevitably the consumer is blamed for picking the "wrong" products or being uninformed of the risks.

Neoliberalism is also important in understanding how products are branded and how brand culture can encompass much more than just the product alone but also contributes to identity formation and citizenship (Wilson, 2018). Within brand culture, companies can capitalize on social trends and public concerns to present their products and brands in a particular way without necessarily making any substantial changes to their products. In the example of green products, companies can choose to market their products as eco-friendly while not necessarily changing their corporate practices of being more environmentally friendly (Wilson, 2018). At the same time, consumers can utilize products to indicate to others, or perhaps even to themselves, their social values and identity. The positioning of certain products as demonstrating good values such as being environmentally friendly or "green", puts the choice back on the consumer to be ethical consumer citizens who make socially responsible choices (Wilson, 2018).

For consumers who choose not to consume in this way, including for reasons of affordability, the blame is on them rather than the large corporation and their environmental impact. In a similar way to green products, the concept of "clean" products might also put the blame back onto the consumer. The purchase of "clean" products as opposed to conventional products demonstrates that the person buying the product has taken personal responsibility for reducing their health risks through product choice. They have researched the products and have chosen to make a decision that will maximize their own wellbeing and reduce disease. At the same time, clean products might also demonstrate ethical consumption in not exposing others in the household or the environment to dangerous chemicals. Yet, as the word "clean" remains unregulated, corporations do not have to do anything to substantially change or modify their products to make them safer, placing the risk on consumers who have even made the "right" choice.

In presenting risk factors in terms of doing the "right" vs "wrong" things, the documentary, *Toxic Beauty,* stigmatizes those who have done the wrong thing or are the wrong type of person who is responsible for their fate. Lerita Coleman in *Stigma: An Enigma Demystified* describes stigma as the process of "branding or marking certain people… in order to make them appear different and separate from others" (Coleman, 1986, p. 143). As Coleman explains the root of stigma is difference and any element of human difference (Coleman, 1986). Deane Berg, the plaintiff in the original Johnson and Johnson is marked as distinct from other cancer victims based on her absence of other risk factors besides talcum powder use. Berg in her description of risk factors differentiates herself from others in how she has done her due diligence to protect her health. One way in which Berg reveals that she has protected her health is through her physical appearance and maintenance of her body. Berg at the time remarks how

she was the picture of health in maintaining an appearance that was not overweight or obese. Possessing this attribute of a specific body type helps Berg justify not only to herself but to a court that she was in superior health before her cancer diagnosis. Additionally, lifestyle choices like having children and not using birth control pills add to her argument that she has done all the "right" things. Even something as uncontrollable as her family history adds to the list of how she demonstrated superior health and preparedness to others. It is emphasized in *Toxic Beauty* that while it may seem as though consumers made the choice to purchase Johnson and Johnson baby powder, the lack of information available on the risks did not make their purchasing decisions informed by the evidence available.The survivors of ovarian cancer emphasize how distressing the lack of warning label was on their decision making. Even for consumers wanting to make the best choice by selecting the right product, no information was ever available on the potential risks of the product. The survivors further reiterate that if they were given this information to begin with, they would have never elected to use Johnson and Johnson's baby powder. Despite the known risks of cosmetic products and the acknowledgment that the problem lies in the regulatory process of safeguarding cosmetic products in the United States, the documentary presents the solution of advocating for policy change as something that has been tried and failed.

Neoliberalism and Wellness Culture

Within a neoliberal context, there is an expectation of each individual working on their own to solve problems. The topic of health and wellness within neoliberalism is not simply a neutral hobby of which one may or not participate, but rather a moral imperative with an implication that one can always become healthier, fitter, and generally better (Welsh, 2020). Within a neoliberal model, good health after all is seen almost entirely as a product of personal choice (Welsh, 2020). Within the issue of cosmetics, the documentary regularly argues against

the practices of Johnson and Johnson executives, with a particular disdain for their lack of accountability and the personal blame they placed on the victims of cancer caused by their products. In the documentary, it is emphasized how the consumers should in no way be blamed, even if Johnson and Johnson executives will find faults with victims in their lawsuits. Yet, at the same time, in some ways, the documentary also positions the consumer as personally responsible for their fate by suggesting that by making smarter product choices, they can avoid dangerous ingredients. Although at other points of the documentary, the burden of chemical exposure in personal care products is described as too insurmountable to avoid, it is still assumed that consumers can do better in their choices. One solution to the risks of cosmetics for the everyday consumer is to select "clean" products instead of conventional products. To show the example of how one might select clean products, the story of MyMy Nyguen, a medical student looking to mitigate her exposure to toxic chemicals in cosmetics on a journey to buying "better" clean products from a local boutique, is featured (Ellis, 2019). Her story illustrates how the consumer is held accountable for how they navigate the personal care market and product risks.

Despite this accountability being shifted to the consumer, there are flaws within this push to buy clean products from a local boutique. Namely, not every community has such a boutique location, especially in small towns and rural areas. These products also likely come at a higher price point that is unattainable to most consumers. Additionally, the chemical body burden tests Nyguen receives to test the efficiency of the "clean products" are not available to average consumers. Even if such testing was available, these tests may not reveal improvements based on "clean" status, as clean products may or may not have substantial differences in product content or quality. Products labeled "clean" might even be produced and distributed by the same large corporations that produce conventional products.

The problem with the idea of "clean" products is that often these products are not proven scientifically to be of superior quality or safety, but instead, they are part of a wellness industry that encourages consumers to make "better" choices for their health and well-being even if these products are of unknown scientific effectiveness. The idea of a wellness culture supports participation in practices that improve health and happiness through self-care activities like yoga, dieting, and meditation (Badr, 2022). The idea of wellness culture coincides with the principles of neoliberalism by supporting the optimization of self, and the moral imperative of making oneself healthier, happier, and better (Badr, 2022). Oftentimes "wellness culture" or wellness practices are corporate-supported or corporate-backed in an attempt to encourage the consumption of products that will help you achieve wellness (Badr, 2022). Within the concept of wellness capitalism and product use, the idea of wellness also supports the idea of a "perfect user", the ideal but unattainable consumer who through significant efforts can govern themselves to make the right choices in consumption (Lacey et al., 2021).

Expertise and Insurmountable Risk

The risks associated with cosmetics products are presented within the documentary as insurmountable. The problem is presented as rooted within the foundation of the cosmetic and personal care industry itself starting with products like arsenic being used in cosmetics products in the 1930s (Ellis, 2019). The industry furthermore is slow to change and has remained relatively stable just as the use of "toxic" products that as *Toxic Beauty* alleges is the basis of the industry. Part of this basis in dangerous products according to the documentary lies in the "innocent until proven guilty" approach that is used to regulate cosmetics, known more formally as postmarket surveillance. This concept indicates that for many cosmetic products, there is no safeguard to ensure that product ingredients are safe in the long term and instead, the process is

responsive to complaints of illness symptoms in response to specific products. However, this process in the meantime leaves the consumer with unknown risks to the products currently on the market. Additionally, for many people the development of a disease like cancer may be based on a variety of factors, including multiple environmental exposures, making it difficult to pinpoint a specific product. Other conditions, such as a benign breast tumor, as seen in the film in twenty-four-year-old medical student MyMy Nguyen may be presented by medical professionals as being of unknown origins, even if MyMy herself feels as though she is too young to develop such a condition randomly and links her diagnosis to chemical exposures.

Within the documentary, the risks created by the cosmetics industry are presented as equally insurmountable as the burdens of patriarchy and capitalism. Women are presented as needing to band together in order to educate and inform other women about the risks of these products. Industry, it is argued in the film, will not prioritize the interests of women, and will instead prioritize profit. They argue that men have created the beauty standards as well as the industry of beauty and cosmetics and will continue to support the interests of maintaining these standards and this industry as that is their motivation.

The presumed assumption of audiences before watching the documentary is that products must be relatively safe if they are on the store shelves. The documentary however must overcome this thought process to prove the risks of cosmetics and personal care products. In order to do this, the documentary often calls upon a wide variety of experts. Many experts have traditional credentials such as advanced medical and scientific training. In addition, women with lived experiences of having cancer as a result of personal care product use, are also called upon as experts to the detrimental effects of these products. A third type of expert that is consulted upon within the film is a product expert, in the form of a sales associate at a small boutique in

Nguyen visits. While other experts within the documentary are shown alongside their job titles and academic credentials, the lifestyle expert, a sales associate who is referring to Nguyen to buy "clean" products from her store, is not introduced as having a scientific or clinical background. As described in *Smart Living: Lifestyle, Media, and Popular Expertise* by Tania Lewis, the sales associate presents as an expert in health and lifestyle, and advises how to make improvements through individual choice, using the products she is selling (Lewis, 2008). Experts like the sales associate transform the conversation of the risks of cosmetics products to a larger conversation about lifestyle and personal choices, even if the evidence is unknown for the efficiency of the new "clean" products (Lewis, 2008).

Heroes and Villians in the Film

The film presents a clear villain, which is the personal care product industry, represented by Johnson and Johnson. At the same time, several "heroes" emerge, namely those who are white, well-educated in the health sciences, and are uninterested in profit, unlike Johnson and Johnson. Within the storyline of the documentary, one of the first "heroes" of the film we are introduced to is Deane Berg, who was the plaintiff in the original civil lawsuit against Johnson and Johnson for negligence. Deane Berg herself is a survivor of an advanced form of ovarian cancer, likely caused by J&J baby powder. Berg is also a healthcare provider as she is a physician assistant and after her diagnosis she was able to explore the medical literature for additional information on ovarian cancer. Berg describes herself as not having any risk factors except the genital use of talcum baby powder. This lack of other risk factors leads her attorney to describe Berg as a strong candidate to face Johnson and Johnson. Berg herself within the film mentions her first thought upon her cancer diagnosis was asking what she did wrong (Ellis, 2019). Berg then researches the potential origins and risk factors associated with ovarian cancer

seemingly as the answer to what she did wrong. Berg then determined that she avoided the "wrong" things or the risk factors as she had children, did not have a family history of cancer, she was not obese or overweight, and she had never used birth control pills. In this way, Berg stigmatizes people with these identities as doing some of the "wrong things" even if ultimately the cause of their cancer was also Johnson and Johson`s products. Within the documentary, several women are featured who have suffered from reproductive cancers as a result of talcum powder use. While other women are presented in similar circumstances as Berg, having been diagnosed with ovarian cancer after long-term Johnson and Johnson talcum product use, only Berg has the distinction of being the ideal plaintiff in the Johnson and Johnson trial.

It is particularly emphasized within the film that Berg, unlike Johnson and Johnson, values what matters, human life over profit. It is remarked in the film that Johnson and Johnson initially offered Berg $800,000 then increased the sum to $1.3 Million in exchange for dropping the trial and not going to court. Berg, in an action that the film sees as admirable, rejects the money instead insisting that the case go to trial to fulfill her purpose of warning other women about the risks of Johnson and Johnson products. While this decision is viewed as admirable within the film, it is also worth questioning whether other women would also be able to make this choice to reject such a large sum of money. Perhaps other women, who are not featured or seen as admirable might have had no choice but to accept the sum especially given potential medical debts as a result of lengthy cancer treatments and time missed from work. This film emphasizes the values of being altruistic and not being "greedy" as particular strengths of Berg. In the end, Johnson and Johnson was found to be liable within the trial against Berg; however, she was offered no financial settlement. Berg herself finds it odd that in a civil case, she would

not be awarded a financial sum, especially with the plaintiff found guilty. Berg however says that walking away from the experience with her life is the most valuable thing.

Within the film Johnson and Johnson as a brand often becomes associated with greed and businessmen. The film points out that the executive committee of Johnson and Johnson throughout the decades has been composed of male leadership. It is implied that men running the company care more about profit than women's health, which is something that does not personally affect them. Berg is praised for values more closely associated with femininity such as not asking for too much, not being greedy or burdensome, and being a selfless hero. Johnson and Johnson is criticized for being the opposite, being too powerful, greedy, and selfish. The film contends that men who run large corporations such as Johnson and Johnson capitalize on women's insecurities and imply that without their products they will smell bad, will not look sexy, or their flaws will show.

At the same time of the discussion of heroes and villains within the film, some victims seem to be disempowered by their experiences. In particular, one recurring audio segment in the film is of an interview that has seemingly taken place in the past, of a woman being asked about her cancer experience and use of Johnson and Johnson products. Instead of seeing her face as we do with the other patient interviews with this woman, we simply see the transcript of her interview being written out in red font while the imagery of white powder falling against a black background is shown. It is not until the end of the film that it is revealed that the woman in the audio was Jackie Fox, an elderly black woman who died of cancer-related to her use of J&J baby powder. Unlike Berg who is presented as a hero figure, for much of the documentary Fox is simply a faceless victim, seemingly in part due to the highlight on Berg`s altruism on dispersing information about Johnson and Johnson as opposed to keeping the settlement.

Legislative Considerations

It may seem that to reduce the risks associated with personal care products, there should be greater government regulation on such products. In many other Western countries moreover, especially within the EU, far more ingredients are banned based on the scientific evidence that is currently available. At the same time, corporations as described by the documentary attempt to muddy this science and make the issue seem as though product risk is debatable and should be up to consumer choice. This issue of making the scientific evidence into a debate and delaying the banning of dangerous products is likened to cases within the cigarette industry in which clips are shown in legislative settings where those in support of the tobacco industry argued that cigarettes were in no way addictive, which is now clearly known to be false. The scientific experts within the documentary see this issue as an affront to science itself in presenting such clear evidence as the topic of a political debate. Several clips are shown throughout decades within Congress and Senate in which legislators have brought up the issue of unsafe cosmetic products. According to the documentary time and time again whenever this issue is brought up no real change is made, seemingly eliminating the possibility of legislative action as a solution to the issue of unsafe personal care products.

At the same time, within the documentary, the issue of cosmetic safety is often likened to cigarette smoking, which despite strong corporate lobbying forces much like the cosmetic industry, was in many ways successfully legislated to better inform consumers and create improved health outcomes. The documentary, however, casts a pessimistic look at the possibility of change within the industry. In addition to failed legislative measures, the regulation of the cosmetic industry is also seen as insurmountable with the number of cosmetic products that are commonly used as well as the number of ingredients that could be harmful within those products.

Unlike cigarettes which in the United States are regulated heavily with restrictions on advertisements and clear warning labels advising of the risk of specific diseases like lung cancer, the cosmetic industry is presented as something that is larger in scale with a long list of ingredients potentially needing a consumer advisory warning. Unlike the tobacco industry, the issue cannot be reduced to just a few products like cigarettes, cigars, and chewing tobacco. In the cosmetics and personal care market, not only are the list of products that are of concern extensive including shampoos, lotions, mascaras, deodorants, lipsticks, serums, nail polish, and moisturizers just to name a few products, but also the long list of individual ingredients within each product adds to the risk of exposure to chemical compounds. It seems as though for the everyday person nothing can be done, and we are simply at the mercy of what chemicals product manufacturers choose to put into their products. While the documentary casts a pessimistic view on the hopes of legislative action, the documentary does approach cultural change and individual action as solutions. Given the documentary`s emphasis on individual action in retail settings as compared to legislative action, it is compelling to consider consumer attitudes and preferences regarding clean cosmetics products.

Present Study

While some literature is available on the idea of the "green consumer", little research is available on the idea of the "clean consumer", who might have both health and environmental toxicity considerations. In a similar way to the idea of a "green gap", it may also be true that while concerns over personal health are nearly universal, not everyone becomes a "clean consumer" or goes out of their way to purchase clean products. The following study aims to build a greater understanding into the concept of "clean consumption" including understanding consumer preferences and attitudes towards clean products as well as gaining an understanding

of whether greater interest in clean products may be associated with any significant demographic or personality factors. Results will be accessed in two ways. One way is by accessing correlations between scores on the Clean Cosmetics Attitudes Scale (CCAS) and other variables such as self-efficacy, Big Five traits, and demographic variables. Another way of accessing results will be to complete a median split of the CCAS scale in order to make comparisons between those belonging to the "low" scoring group and those belonging to the "high" scoring group. Within the study, the following hypotheses were made. 1). Consumer scores on the CCAS scale will correlate significantly with Big Five personality traits. When accessing "high" vs "low" CCAS scoring groups, those with "high" scores indicating that they are more interested in clean consumption will differ significantly in Big Five personality traits from those in the low group who are less interested in the consumption of clean products. 2). Scores on the CCAS scale will positively correlate with self-efficacy scores. Similarly, those with "high" scores on the CCAS scale will demonstrate higher scores in self-efficacy as compared to those in the "low" CCAS score group. 3). Correlations will reveal significant associations between CCAS scores and demographic factors including age, educational attainment level, and income. Those with high scores on the CCAS will be significantly different in demographic categories of age, educational attainment level, and income as compared to those in the low scoring CCAS group.

Materials and Methods

Participants

Participants recruited from the online survey host Prolific. The survey was open to women who were eighteen or older and located within the United States. Participants were incentivized to participate through a small payment of $2, pending the successful completion of one of two attention checks. There were a total of 31 female-identifying participants who successfully

completed the survey. The average age of participants was approximately 35 years old and the majority of participants (58%) were college educated. Additional demographic information can be found within the Results. All participants were located in the United States. Participants were expected to successfully complete one of two attention checks in order for their participation to be considered valid.

Materials

Before completing the survey, participants were asked to read and virtually sign an online consent form. Participants were first asked demographic questions regarding their age, racial background, educational attainment, and income bracket. Participants were additionally asked a question of whether they had previously purchased clean products, which products they had purchased, and how frequently they purchased these items. All survey questions were able to be skipped by the participant, with demographic questions additionally having the option of responding “prefer not to answer”.

Clean Cosmetics Attitude Scale

Participants were asked to answer questions regarding their attitudes towards clean cosmetic products. Items were adapted from a 2021 study by Shimul et al. regarding attitudes towards “green” cosmetics. For this study, the phrase “green” was replaced with “clean” and questions regarding ecological motives and environmental knowledge were omitted (Shimul et al., 2019). Participants were asked to assess the following statements using a 7-point Likert scale with potential responses ranging from 1 “strongly disagree” to 7 “strongly agree”. Items include statements such as, “I believe that clean cosmetic products are more effective than conventional cosmetic products". The Clean Cosmetics Attitude Scale as used in this study had a total of 26 items, including a mixture of adapted questions with minor changes from the original Shimul

scale on green cosmetics as well as self-generated questions to gather further information on clean cosmetics. The self-generated questions included an expanded section on health concerns (assessed by 6 items, e.g. “I try to buy cosmetics that are better for my health” or “I try to only buy products that have ingredients I can pronounce"), as well as an entirely new section on personal responsibility (assessed by 3 items, e.g., “It is my responsibility to keep myself and my family safe from harmful chemicals”). Three items within the Clean Cosmetics Attitudes Scale were reverse coded. The reverse coded items were modified to include words such as “not” to help lessen response bias. To assess the reliability of the scale, the survey items of the CCAS were accessed for unidimensional reliability using McDonald's Omega, and Cronbach's alpha. The McDonald`s Omega value was .91 while the Cronbach`s alpha value was .89. An average score variable “CCAS_Avg” was then formed accessing the mean score for the CCAS scale. Higher scores on the Clean Cosmetic Attitudes Scale indicated that the respondent had more favorable, interested attitudes towards clean products.

Big Five Personality Traits

The Big Five personality traits of Consciousness, Extraversion, Agreeableness, Neuroticism, and Openness to Experience were assessed using the scale developed by Rammstedt & John (2007). The scale consists of 10 items and uses a 5-point Likert scale with potential responses ranging from 1 (Disagree Strongly) to 5 (Agree Strongly). Participants were given the prompt: How well do the following statements describe your personality? Items included characteristics like “reserved” and “tends to be lazy”.

Self-Efficacy

General self-efficacy was assessed using a ten-item scale (Bonsaksen et al., 2013). Participants were given the following prompt: Please respond between 1=not at all true, 2=hardly

true, 3=moderately true, 4=exactly true. Items on the scale include: “I can always manage to solve difficult problems if I try hard enough”.

Procedure

The study took place online. All materials were programmed into SurveyMonkey and the final survey was hosted by Prolific. Recruited participants were informed that they must self-identify as women to participate and would be asked upon starting the survey if that is the way they identify themselves. If they did not qualify based on this question, they would not be permitted to continue participation. After signing the informed consent documents found in the appendix, participants continued to the demographic section (approximately 1-2 minutes). Participants then advanced in the survey to complete the Clean Product Attitudes Scale, The Big Five Personality Trait Scale, and the Self-Efficacy Scale. The total time to complete the survey was estimated to be approximately 10 minutes based on the estimate of survey completion time provided by SurveyMonkey. Participants were then provided with a debriefing form at the end of their participation.

Results

The present study set out to test three hypotheses: (1) Scores on the Clean Cosmetics Attitude Scale would correlate with scores on the Big Five personality scale. Additionally, those in the “high” score group on the CCAS would differ significantly from those in the “low” scoring group on the CCAS in terms of Big Five personality traits. (2) Higher CCAS scores would correlate with higher self-efficacy scores. Participants in the high scoring CCAS group would have significantly greater self-efficacy than those in the low scoring CCAS group. (3) Scores on the Clean Cosmetics attitudes scale would correlate with demographic factors of age, educational attainment, and income respectively. High scorers on the CCAS would present with

differences in demographic characteristics of age, educational attainment, and income as compared to low scorers.

Participants

The online survey was launched on February 14, 2024, and data collection was completed within the same day. A total of 31 participants successfully completed the survey and were included in the analysis. Two additional participants were excluded from the analysis for failing to complete the two attention checks. While 30 participants were initially recruited, one additional participant was included as they filled out the survey but did not complete the compensation portion. In terms of demographics, the average age of participants was 34.87 (*SD*=10.73). The median age was 32 years old and the youngest participant was 21 years old while the oldest was 55 years old. All participants identified themselves as female. Participants were asked to categorize their annual income. The most frequent category of income identified by 25.80% of participants was between $25,000-$49,999 per year. Other common responses, included $50,000-$74,999 (19.35%) as well as between $100,000-$149,999 (16.13%). All other income categories were reported by 10% or less of participants. For race, a large portion of participants 45.16% choose to not respond. For those that did respond, 14 participants (29.03%) identified themselves as white, 4 participants (12.90% identified as black), two identified as Asian (6.45%). Finally, one participant (3.23%) identified as Hispanic, and one participant identified as multiracial (3.23%). In terms of educational attainment, a majority of participants reported completing college (58.07%). Other common responses included some college (22.58%), followed by high school/GED (9.67%) and master's degree (9.67%). When asked to identify themselves politically on a scale of 1 (very liberal) to 9 (very conservative), the average participant answered 3.29 (*SD*=2.32), with a median of 3. When asked if they had ever noticed if

health or beauty contained words like clean, 83.87% reported they had noticed this, while 12.09% did not notice this, and 3.23% did not remember.

Big Five and CCAS

In the hypothesis, it was generally predicted that, similar to green product use that has shown some associations with the Big 5 (Duong, 2021; Sun et al., 2018), clean product use and attitudes (as measured by the Clean Cosmetics Attitude Scale) may correlate with Big Five personality traits. However, it was not specifically predicted which specific traits may correlate with the CCAS. Contrary to research that found some associations between the Big 5 and green product use, there were no significant correlations between any of the Big Five characteristics and the Clean Cosmetics Attitudes Scale (CCAS), all *p*s>.29. For descriptive statistics and intercorrelations, please see Table 1.

In addition to assessing correlations, an independent t-tests were conducted to compare differences in those who scored "low" or "high" on the CCAS, after conducting a median split of CCAS scores to create a group of participants who weakly and strongly endorsed clean product use, respectively. High scores were considered to be at or above the median of 5, while low scores were considered to be scores under 5 on the CCAS. There were a total of 15 participants with a "low" score on the CCAS (M = 4.21, SD = .65) and 16 participants with a "high" score (M = 5.51, SD = .42). Five independent samples t-tests were performed to access the differences between those belonging to the "high" vs "low" CCAS scoring groups for the five traits of the Big Five. In regards to the trait of openness, an independent t-test did not reveal significant differences between openness scores between low (M=4.00, SD=1.07) and high scoring groups (M=3.44, SD=.89) on the CCAS, $t(29) = 1.59$, p =.12. The effect size as measured by Cohen`s d was .57, indicating a positive moderate effect size. When accessing conscientious scores an

independent t-test was conducted finding no significant differences in the scores between the low (*M*=3.73, *SD*=.78*)* and high (*M*=3.56, *SD*=.95) CCAS scoring groups, *t*(29)=.55, *p*=.59. The effect size (measured by Cohen`s d) was .20 indicating a small positive effect size. Moving onto extraversion, the independent t-test conducted did not find significant differences in extraversion scores between the low CCAS (*M*=2.40, *SD*=.81) and high CCAS (*M*=2.56, *SD*=.96) scoring groups, *t*(29) = -.51, *p*=.62. The effect size as measured by Cohen`s d was -.18 indicating a small negative effect size. When accessing agreeableness, there was no significant difference in agreeableness scores between low (*M*=3.40, *SD*=.83) and high (*M*=3.03, *SD*=1.16) scoring groups on the CCAS, *t*(29) = 1.01, *p*=.32. The effect size (Cohen`s d) was .36 indicating a small to medium effect size in a positive direction. Finally, in regards to neuroticism there was also no significant difference between low (*M*=3.43, *SD*=1.15) and high (*M*=3.06, *SD*=.93) scoring CCAS groups, *t*(29)=.99, *p*=.33. The Cohen`s d value was .36 which indicates a small to medium positive effect size.

Self-Efficacy and CCAS

In regards to self-efficacy, contrary to hypothesis 2, there was no significant relationship between self-efficacy and the average score on the CCAS, *r*(30) = .04, *p* = .86. For descriptives and correlations, see Table 2.

Mirroring the analyses conducted for the Big 5, an independent t-test was run to see if self-efficacy differed between the 15 participants with a "low" score on the CCAS (*M* = 4.21, *SD* = .65) and the 16 participants with a "high" score on the CCAS (*M* = 5.51, *SD* = .42) on the CCAS. An independent t-test did not reveal significant differences in self-efficacy scores between the low (*M*=3.04, *SD*=.37) and high (*M*=3.00, *SD*=.28) CCAS groups, *t*(28) = .31, *p*

=.76. The effect size, as measured by Cohen`s d, was .36, indicating a small to medium positive effect size.

Demographics and CCAS

Contrary to the last hypothesis, there was no significant correlation between age of participant and score on the Clean Cosmetics Attitude Scale (CCAS), $r(30) = .22$, $p = .24$. To further evaluate the relationship between age and CCAS scores, an independent t-test was run to see if there were any significant differences in age between those with "low" CCAS scores and those with "high" CCAS scores. The independent t-test did not reveal significant differences in age between the low CCAS scorers (M=32.33, SD=10.58) and high CCAS scorers (M=37.25, SD=10.65), $t(29) = -1.29$, $p = .21$. The effect size which was measured by Cohen`s d was .37 which indicates a small to medium positive effect size.

Since educational attainment and annual income were both ordinal variables within this study, a Spearman's rho adjustment was performed to test for correlations between educational attainment and CCAS scores and annual income and CCAS scores respectively. For educational attainment, no significant correlation was found between educational attainment level and CCAS score, $r_{Spearman`s\ rho}(30) = .19$, $p = .31$. Similarly, for income level, no significant correlation was found between income level and CCAS score, $r_{Spearman`s\ rho}(30) = .33$, $p = .07$ for income. As the variables of educational attainment and annual income were assessed ordinally, an independent t-test could not be run. Instead, an ANOVA was selected to assess differences between "high" and "low" scoring groups. Income was not able to be run via an ANOVA analysis due to a low number of observations within each income group. For education, a one-way ANOVA was used to compare the effects of different levels of four different educational attainment levels on average CCAS scores. The levels of educational attainment represented in the sample included completed high school (M=4.57, SD=.73), some college (M=4.91, SD=1.17), completed college

(*M*=4.79, *SD*=.78), and master`s degree (*M*=5.64, *SD*=.58). Means and standard deviations listed represent scores on the CCAS for each group. The one-way ANOVA revealed no statistically significant effect of educational attainment level on CCAS scores, $F(3, 27) = 1.01$, $p=.40$. The effect size eta squared (η^2), was .10 indicating a small positive effect size. The majority of the participants belonged to the completed college group (19 participants), while 3 completed high school, 6 completed some college, and 3 completed a master's degree.

In addition to the demographic factors of age, educational attainment, and income which were the three primary demographic variables focused on within the study, participants were also asked one question on political orientation. A correlation was run to access any associations between political orientation and scores on the Clean Cosmetics Attitudes scale. There was no significant relationship between political orientation and scores on the CCAS, $r(30) = .18$, $p = .35$.

Discussion

Previous research has concluded that there may be relationships between personality characteristics of self-efficacy and Big-Five personality traits with “green” consumption or pro-environmentalism (Duong, 2021; Sharma & Dayal, 2017). Yet, much less research is available on the topic of “clean” consumption or clean consumers including whether there are distinct personality or demographic traits that define the “clean” consumer. The present study aimed to help fill some gaps within the research on the topic of clean consumers to better understand whether there are distinct personality traits including self-efficacy and Big Five personality traits that define the clean consumer. Additionally, it was evaluated whether so-called “clean” consumers might differ in income, educational attainment, and age compared to consumers who have less interest in the consumption of clean products based on previous

research on the demographics and green consumption (Witek & Kuzniar, 2020; Zhang & Dong, 2020). The present study had three main hypotheses; all indicating that consumers more interested in clean products would have distinct traits from consumers less interested in clean products. The first hypothesis stated that consumers more interested in clean consumption would have distinct traits on the Big Five personality assessment as compared to consumers less interested in clean products. The hypothesis also indicated that significant correlations would exist between some Big Five traits and scores on the Clean Cosmetics Attitudes Scale (CCAS). It was not hypothesized which specific traits might differ within the Big Five scale, only that there would be distinct personality differences. The second hypothesis proposed that clean consumption would correlate with higher levels of self-efficacy. Furthermore, it was thought that positive correlations would exist between CCAS scores and self-efficacy scores. Finally, it was thought that correlations might exist between demographic characteristics of income, age, and educational attainment and CCAS scores. It was also thought that "high" and "low" scorers on the CCAS may differ in demographic factors.

Cross-sectional correlational data from 31 female-identifying participants in the United States were collected on Prolific. Results indicate that all three of the main hypotheses were not supported in the present study. There was no significant correlation between personality traits of Big Five personality traits nor self-efficacy and scores on the Clean Cosmetics Attitudes Scale. Additionally, there were no significant correlations between demographic factors of income, age, or educational attainment and scores on the Clean Cosmetics Attitudes Scale. Additional analysis including t-tests revealed no significant differences in Big Five traits nor self-efficacy. For demographics, a t-test revealed no differences in age between the "high" and "low" CCAS

scoring groups, and ANOVA results did not indicate significant findings between groups for the ordinal variables of income and educational attainment.

Based on the results of the current study with a group of 31 online participants, there do not appear to at this time be any significant results indicating that clean consumers are a distinct group with unique personality traits and demographic characteristics. One potential explanation for the lack of significant findings may be an issue within the survey itself not capturing meaningful findings, as a result of Type II error. In particular, the low sample size of 31 may have contributed to not having enough statistical power to find significant results. It is possible that due to the small sample size meaningful results may have been missed by not reaching enough participants. In particular, when assessing the differences between those belonging to the "low" vs "high" scoring groups on the CCAS, each group only consisted of 15-16 participants which may not have been enough participants to meaningfully describe those with low vs high interest in clean consumption.

However, it is also possible that there are in fact not a series of fixed traits, either for personality or demographic factors that characterize the typical "clean consumer". Instead of thinking of consumers in two distinct categories of "clean consumers" or "not clean consumer" it might be more useful to think of all people as potential clean consumers. While some people might have more or less interest or intention to buy clean products, it may not be a distinct or fixed category that people belong to. Each time one enters a store or shops online for cosmetic and personal care products, they may have options available to them for products that are marketed as "clean". While there may be some individuals who primarily or exclusively buy clean products or never buy clean products, perhaps the average consumer is someone who might select "clean" products on some occasions or not select the "clean" version on other

occasions. These decisions could be based on changing factors such as what is available in the store, what the price of the products are, and what the packaging looks like.

It is also worth noting that “clean” products often come at a premium price point, which might impact not only buying decisions but perceptions of the product. One journalist found that while a traditional argan oil product retailed for $6.80 per ounce, the “clean” version retailed for $28.80 per ounce (McPherson, 2021). Similar results were found for foundation and hair mask products (McPherson, 2021). Due to this price differential between clean and traditional products, the decision to buy a “clean” product might have more to do with wanting to indulge in a luxury product rather than having specific health concerns. The clean label may not be the factor that makes consumers feel that the product is healthier or of high quality, but instead the price might be what makes people assume the quality of the product is high. In fact it is common that people use price as a proxy for quality. This phenomenon is known as the price-quality heuristic (Allison & Uhl, 1964). It is very possible the price differential of clean products makes people assume the product is high quality and safe.

In contrast, with green product consumption, several studies have indicated that generally consumers find green products to be lower quality than conventional products. This result has been found in studies assessing perceptions of products like auto parts, energy saving appliances, and recycled paper products (Testa, et al., 2021). “Green" consumers therefore tend to be highly motivated by the environmental causes of buying that specific product, in spite of the fact that they might suspect the quality to be lower. It is possible that due to the price-quality heuristic “clean” consumers may differ from green consumers as they might see the “clean” products as higher quality or more luxury items, and therefore may have motivations beyond just the benefits of product safety or “cleanness”. Perhaps unlike green consumers, clean consumers do not feel as

though they are making a sacrifice and instead are buying something that is both high quality and safe from chemical exposure.

Due to the potential differences in perceptions of product quality, it is possible that green consumption may be more based on altruistic intentions of sacrificing quality in order to provide benefits to the environment, whereas clean product consumption is more closely tied to personal benefits or benefits to families. The potential lack of altruistic motivations to buying clean products as opposed to green products, might lead to less of a steadfast position to support a social cause, and instead may lead to situational factors like price and availability being more relevant to buying decisions.

Limitations

There are several limitations within the current study. One limitation within the study was having a low sample size of 31. When studying a variable such as income or education with multiple variable levels, the number of participants belonging to each group becomes quite low. While there were no significant findings within the present study, some of the lack of association might be attributed to this low sample size, particularly with the ordinal variables of education and income. For income, the number of individuals belonging to each group was so low in fact that an ANOVA analysis could not be completed. In future research, it may have been useful to measure income as a scale variable with individuals writing in their income in order to complete a t-test instead. With education, three of the groups compared had less than 10 participants belonging to that educational attainment level which may also have led to not having enough representation from each educational attainment level group. Another limitation of the study was the nature of the study being conducted with online participants. It is possible that participants may not have read the questions to completion or may have selected answers in a random

fashion. While there were measures taken such as attention checks and reverse coding to ensure participants were engaged in the study, data quality may be an issue with online survey methods. Additionally, it is possible that results obtained via an online survey setting may differ greatly from decision making within an actual retail setting. While participants may have reported that they intended to consume clean products, it is unknown whether these intentions would correspond with buying behaviors.

The method of selecting participants within the study might also present a limitation There may have been some self-selection bias in the survey as potential participants on the Prolific platform who met the recruitment criteria choose, amongst a list of potential surveys, to participate in the study which was titled “Clean Cosmetics Consumer Survey”. It is possible that participants already interested in the topic of clean cosmetics elected to participate in the survey based on their interest and knowledge of the topic. Self-selection bias could potentially contribute to threatening the external validity of the study, or making it so that the results are not as applicable to the population as a whole. Survey participants on Prolific, especially those who elected to participate in the specific survey, might have differed significantly from the average American woman which may have impacted the results.

Future Directions

One factor that was not considered within the initial survey design was brand loyalty. While the variable of openness within the Big Five may have measured one`s level of openness to trying new things or new experiences, the variable of brand loyalty might have more specifically assessed how participants felt about trying new products as opposed to continuing to use the same brand. In past research on green consumption, it was found that a barrier to choosing to try green products was having existing brand loyalty to a traditional product (Gleim

et al., 2014). Within the clean market space, new brands have been emerging in recent years with clean product alternatives. However, for some consumers they may feel loyal to a particular brand or product and are unwilling to try a new product, even if they may have positive attitudes towards lowering exposure to chemicals in products.

Given the background research presented on the gap between attitude and behavior, in future studies it may be worthwhile to assess actual buying behaviors as opposed to stated attitudes and intentions. Particularly, given the extant research on a "green gap", it might be interesting to study whether a concept of a "clean gap" might also exist and whether interventions such as consumer education could be used to increase clean buying behaviors. The characteristics of actual buyers of clean products electing to spend additional money on buying specific products may differ from participants who more passively state a positive viewpoint on clean products. Within a lab setting, it might be possible to simulate a retail setting and ask participants to make buying decisions based on packaging information that is presented to them or alternatively it might be possible to add more direct questions on past purchases. Understanding buying decisions may also be possible through qualitative research such as focus groups or written responses from consumers.

Given the price-quality heuristic, future research might also study if consumers feel that products with a higher price point may have more health benefits or may exhibit less detrimental effects than less costly products. This type of study might also help to determine if it is the price differential or the inclusion of keywords like "clean" that has the greatest impact on buying decisions. Additionally, given the increased price for organic and clean products and the similarities in concerns over chemical exposure in the products they consume, in future research it might also be worthwhile to compare the idea of clean consumption of cosmetics with organic

consumption of food. In future research, it could be interesting to assess how concerned consumers are over the health risks of chemicals and additives in foods as opposed to cosmetics, as well as how this level of concern translates into willingness to purchase organic or clean products respectively.

Conclusions

In summary, the present research study does not support the idea of clean consumers being a distinct group with clear personality and demographic traits. Due to the lack of support from the current experiment, further research studies might replicate the current study with a larger sample size to determine if the small sample size may have contributed to limited results. Additionally, it might be worthwhile for future researchers to examine how other factors might impact buying decisions and perceptions of clean products, including how price may contribute to assessments of product safety and health value. Other factors such as brand loyalty might also impact buying decisions. Given the limited research on clean consumption as a whole, additional research might also be helpful to understand how concerned consumers are currently about the topic of chemicals in cosmetics products (especially as compared to similar topics like pesticides in food), as well as building further understanding of actual buying behaviors as opposed to attitudes and intentions in relation to clean products.

Table 1

Correlation Between CCAS Average Scores and Big Five Personality Traits

	M	*SD*	1	2	3	4	5	6
1. CCAS_Avg	**4.88**	**0.85**	**-**					
2. Openness	**3.71**	**1.01**	**-.139**	**-**				
3. Agreeableness	**3.21**	**1.02**	**-.198**	**.257**	**-**			
4. Extraversion	**2.48**	**0.88**	**.085**	**-.523****	**-.192**	**-**		
5. Conscientiousness	**3.65**	**0.86**	**.006**	**.272**	**.299**	**-.173**	**-**	
6. Neuroticism	**3.24**	**1.04**	**-.058**	**-.184**	**-.184**	**.114**	**-.181**	**-**

Note: * indicates $p < .05$, ** indicates $p < .01$

Table 2

Correlation Between CCAS Average Scores (including Subscales) and Self-Efficacy

	M	*SD*	1	2	3	4	5	6	7	8	9
1. CCAS_Avg	**4.88**	**.85**	**-**								
2. Self Efficacy Avg	**3.02**	**.32**	**.035**	**-**							
3. Subjective Norm	**5.00**	**1.12**	**.582*** **	**-.112**	**-**						
4. Perceived Behavioral Control	**4.75**	**.58**	**.229**	**-.174**	**-.052**	**-**					
5. Health Consciousness	**5.63**	**1.15**	**.241**	**.430***	**.079**	**-.270**	**-**				
6. Attitude Items	**4.91**	**1.23**	**.910*** **	**-.005**	**.642*** **	**.152**	**.246**	**-**			
7. Purchase Intention	**4.88**	**1.43**	**.803*** **	**-.317**	**.566*** **	**.269**	**-.138**	**.739*** **	**-**		
8. Health Concerns	**4.36**	**1.22**	**.840*** **	**.081**	**.249**	**.207**	**.069**	**.600*** **	**.629*** **	**-**	
9. Personal Responsibility	**5.10**	**1.47**	**.823*** **	**.172**	**.252**	**.186**	**.144**	**.696*** **	**.537** **	**.761*** **	**-**

Note: * indicates $p < .05$, ** indicates $p < .01$, *** indicates $p < .001$

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APPENDIX

Appendix A: Informed Consent

Informed Consent- Clean Cosmetics Survey

Allegheny College
Department of Psychology

Purpose of Research: The purpose of this study is to gain a greater understanding of consumer preferences towards clean cosmetic products.

Method/Procedure: I understand that I will be asked to answer demographic questions and some questions about my personal preferences and attitudes.

Length of Participation: I understand that the questionnaire will take approximately 10 minutes.

Risks to the Individual: I understand that there will be no more risk other than what is normally experienced in everyday life.

Benefits of the Research: I understand that this research will help to expand scientific knowledge in the field of psychology.

Compensation: I understand that I may receive $2 as payment for the completion of the research. Failure to complete the survey and correctly answer at least one attention check question will result in forfeiture of compensation.

Confidentiality, Recording Information, and Data Security: I understand that my name will never be used or associated with any information I provide. Any information that is provided will remain confidential and data will be kept on a password-protected computer and deleted upon final usage.

Voluntary Nature of Participation: I understand that I do NOT have to participate in this research project. Furthermore, I may choose to withdraw my participation at any time without penalty. I understand that I may skip any individual questions that I do not wish to answer, and I may choose not to participate in any part of the study without being questioned. H*owever, I understand that if I fail to complete the survey or fail multiple attention checks, I will <u>not</u> be eligible for compensation*.

Results of Research Project: I understand that I am entitled to a copy of the results once this study is completed by emailing mullen01@allegheny.edu.

Contact Information: If I have any questions about this research project, I can contact Emily Mullen at mullen01@allegheny.edu or the research advisor Dr. Eckstein, leckstein@allegheny.edu.. If I have questions or concerns about the treatment of research

participants in this IRB-approved project, I can contact the Chair of the Allegheny Institutional Review Board (IRB) at IRB@allegheny.edu.

By clicking below, I confirm that I am at least 18 years old at the time of my participation and that I have carefully read and understood the information on this form.

O Yes, I am 18 years or older and I have carefully read the above and wish to participate.

O No, I am not between 18 or I do not wish to participate.

Appendix B: Experimental Materials

Demographic Items

1. Do you identify as a woman?
    i. Yes (survey continues)
    ii. No (sorry you are ineligible to participate)

2. Age: _____ *will have option to be skipped if preferred not to answer

3. Which race or ethnicity best describes you?
    i. Black/African American
    ii. White/Caucasian
    iii. American Indian or Alaska Native
    iv. Asian
    v. Native Hawaiian or Pacific Islander
    vi. Middle Eastern or North African
    vii. Hispanic/Latino
    viii. Multiracial
    ix. Other
    x. Prefer not to answer
4. Which of the following best describes your personal income last year?
    i. $0- $9,999
    ii. $10,000- $24,999
    iii. $25,000- $49,999
    iv. $50,000- $74,999
    v. $75,000- $99,999
    vi. $100,000- $149,999
    vii. $150,000+
    viii. Prefer not to answer
5. Which of the following best describes your highest level of education?
    i. Less than high school
    ii. Some high school
    iii. Completed high school/GED
    iv. Some college
    v. Completed college
    vi. Master`s Degree
    vii. Doctoral or Professional Degree (JD, MD, PhD, etc.)
    viii. Prefer not to answer
6. How would you describe yourself politically?

1 (very liberal) 2 3 4 5 (moderate) 6 7 8 9 (very conservative)
*will have option to be skipped if preferred not to answer

The following questions will refer to products as “clean” as opposed to conventional products. This term is about health and beauty products such as but not limited to cosmetics, deodorants, and skincare.

7. Have you ever sought out alternative products with labels such as “clean” as opposed to the conventional version of that product?
    i. Yes, I have sought out this type of product
    ii. No, I have never purchased this type of product

8. Have you ever noticed whether a health or beauty product you have purchased contains words like “clean”?
    i. Yes, I have seen this before
    ii. No, I have not noticed this
    iii. I don`t remember

9. If you have previously used these types of products, please select which type of product you have previously purchased that might be classified as “clean”.
    i. Clean Deodorant/Antiperspirant
    ii. Clean Toothpaste
    iii. Clean Soap or Body Washes
    iv. Clean Lip Products (Lipstick, Chapstick)
    v. Clean Foundation
    vi. Clean Skin Care Products
    vii. Clean Eye Makeup Products
    viii. Clean Shampoo/Hair products
    ix. Other
    x. None of these products

10. How frequently would you say you buy health and beauty products that might be considered “clean”?
    i. Frequently (every time I go shopping in this category I buy clean products)
    ii. Often (more often than not I buy these products as opposed to conventional products)
    iii. Sometimes (sometimes I buy these products, sometimes I buy conventional products)
    iv. Rarely (more often I buy conventional products)
    v. Never (I always buy conventional products)

Clean Cosmetics Attitudes Scale (adapted from Shimul et. al, 2019)

Please respond between 1 (strongly disagree) and 7 (strongly agree) for each statement.

Subjective Norm Items

1. People who influence my decisions would approve of me buying clean cosmetic products.
2. People who are important in my life would not support me in buying clean cosmetic products.
3. Most of the people who are important to me think that I should buy clean cosmetic products.

Perceived Behavioral Control Items

4. I completely have control over the purchase of clean cosmetics.
5. I do not have the resources and ability to buy clean cosmetics.
6. I am confident that if I want clean cosmetics, I can buy them.
7. I am fifteen feet tall. This is an attention check. Please select strongly disagree. (Attention check)

Health Consciousness

8. I'm alert to changes in my health.
9. I`m not usually aware of my health.
10. I take responsibility for the state of my health.

Attitude

11. I believe clean products are better for my health.
12. I believe that clean cosmetic products are more effective than conventional cosmetic products.

13. I believe that there are substantial quality differences between clean cosmetics and conventional cosmetic products.
14. Between clean and conventional cosmetic products with the same price, I would prefer the clean product.
15. I buy clean cosmetic products because they are better for the environment.

Purchase Intention

16. The probability I will consider buying clean cosmetics is high.
17. I am currently completing an online survey. This is an attention check. Please select strongly agree. (Attention check).
18. I will buy clean cosmetics if I happen to see them.
19. I actively seek out clean cosmetics in a place to purchase them.

Health Concerns (self-generated and adapted from original scale)

20. I try to buy cosmetics that are better for my health.
21. I do not know how to select products that reduce my risk of negative health outcomes from cosmetic ingredients.
22. I research the various ingredients in cosmetics to make informed decisions about what I put in and on my body.
23. I know about ingredients that are in cosmetics and the various effects they may have on my health.
24. I am knowledgeable of phthalates, parabens, and other ingredients frequently used in cosmetics.
25. I try to only buy products that have ingredients I can pronounce.

Personal Responsibility (self-generated)

26. It is my responsibility to keep myself and my family safe from harmful chemicals.
27. I feel responsible for doing due diligence by the process of selecting cosmetics that are good for me.
28. I feel that by buying clean products, I am doing the right thing for me and my family.

Big Five Personality Trait Scale
(Rammstedt, B. & John, O. P. (2007)

Please respond between 1 Disagree Strongly and 5 Agree Strongly to the following statements:

Instructions: How well do the following statements describe your personality?

I see myself as someone who is…

1. Reserved
2. Generally trusting
3. Tends to be lazy
4. Is relaxed, handles stress well
5. Has few artistic interests
6. Is outgoing, sociable
7. Tends to find fault with others
8. Does a thorough job
9. Gets nervous easily
10. Has an active imagination

Self-Efficacy

(Bonsaksen et al., 2013)

Please respond between 1=not at all true, 2=hardly true, 3=moderately true, 4=exactly true.

1. I can always manage to solve difficult problems if I try hard enough.
1. If someone opposes me, I can find the means and ways to get what I want.
2. It is easy for me to stick to my aims and accomplish my goals.
3. I am confident that I could deal efficiently with unexpected events.
4. Thanks to my resourcefulness, I know how to handle unforeseen situations.
5. I can solve most problems if I invest the necessary effort.
6. I can remain calm when facing difficulties because I can rely on my coping abilities.
7. When I am confronted with a problem, I can find several solutions.
8. If I am in trouble, I can usually think of a solution.
9. I can usually handle whatever comes my way.

Appendix C: Debriefing Form

Research Participation Debriefing Form

Allegheny College, Department of Psychology

Purpose of Research: The purpose of this research was to study the relationship between personality variables and clean product attitudes. The goal is to see if certain personality traits including self-efficacy are associated with more interest in buying products designated as clean. This information was not initially included in the Informed Consent so as to not skew or bias any responses.

Hypothesis: Consumers of clean cosmetics products will have distinct personality traits from those who are not as interested in clean cosmetics products.

Compensation: All participants of the study will be compensated for their participation in $1.50 to their Prolific account on the condition that they successfully submit the survey and correctly complete an attention check.

Confidentiality: The data you provided for this research project will be confidential and your name will never be associated with your results. Furthermore, when your data is no longer needed, it will be deleted.

More information:

Shahbandeh, M. (2023, June 5). *Market value of clean beauty worldwide 2021-2028*. Statista.https://www.statista.com/statistics/1303754/market-value-of-clean-beauty-worldwide/

Shimul, A. S., Cheah, I., & Khan, B. B. (2019). Investigating female shoppers' attitude and purchase intention towards Green Cosmetics in South Africa. *SSRN Electronic Journal*. https://doi.org/10.2139/ssrn.3892057

Contact Information: You were offered to be provided with a copy of the findings of the research when completed. Although we cannot tell you how you did individually, you can receive a copy of the overall results by sending an email to the experimenter at mullen01@allegheny.edu or the faculty advisor at leckstein@allegheny.edu.

Experimenter: Emily Mullen E-mail: mullen01@allegheny.edu

Faculty Advisor: Dr. Lydia Eckstein E-mail: leckstein@allegheny.edu

IRB Committee Chair: E-mail: irb@allegheny.edu

Appendix D: Prolific Recruitment

Title: Clean Cosmetics Consumer Survey

Description: In this survey, you will be asked to answer a series of questions regarding your thoughts on clean cosmetics products. You will also be asked to complete demographic items and other survey questions. Participants must identify as women. Participation should take about 10 minutes, and those who successfully complete the survey and fail no more than one attention check will receive $2 in compensation. For demographic questions, participants will have the option of responding “prefer not to answer”, or for questions regarding age and political identity will be able to be skipped if preferred.