

Cosmetics: Consumers' Choice;
Consumers' Policy

by

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ABSTRACT

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Human exposure to toxins happens in a variety of ways in people's daily lives. Most of these toxins are known; however, one source of toxic chemical exposure may be coming from a lesser-known place, from cosmetics. Cosmetics policy in the United States under the authority of the U.S. Food and Drug Administration is often referred to as much more relaxed than in other similarly developed countries such as those in the European Union. This thesis researches whether or not current cosmetics policy in the United States matches the opinions and perceptions of the consumers the policy is in place to protect. As of now, there is information coming from professional parties such as politicians, cosmetic companies, and scientists that inform the current cosmetics policy in the United States. This research concludes that consumer's opinions and perceptions do not align with current cosmetics policy in the United States. Natural cosmetics were seen as a viable alternative to conventional cosmetics in the United States, and this research explores barriers that may be disconnecting consumers from purchasing these products. This research conducted an online survey that asked questions regarding opinions on current policies, as well as natural cosmetics and policy suggestions that have been made by researchers and cosmetic safety advocacy groups. The survey results showed that there are several potential barriers preventing consumers from purchasing natural cosmetics and additionally answered the research question that consumer opinions and perceptions do not currently align with cosmetics policy in the United States. Based on these findings, consumer-informed natural marketing suggestions and policy change suggestions were included as the conclusion of this thesis. In an attempt to demonstrate what consumers truly desire from their cosmetics policy, these suggestions were made by the consumers, for the consumers.

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CHAPTER 1 – INTRODUCTION

INTRODUCTION TO THESIS

Human exposure to toxic chemicals occurs on a daily basis around the world. These pollutants range from those found in food that use pesticides (Nicolopoulou-Stamati, Maipas, Kotampasi, Stamatis, & Hens, 2016) and even in the water people drink, often containing trace amounts of lead and added fluoride (Sawan et al., 2010). Pollutants are prevalent in the air everyone breathes as toxic chemicals are released from manufactured machines, household products, and everywhere in-between (Cormier, Lomnicki, Backes, & Dellinger, 2006; Smith & Lourie, 2009). Most of these exposures are known risks; they are understood to impact human health potentially; and these are generally accepted as compromises. However, some risks may not be as well known; there is not much thought given to the omnipresent toxic chemicals in cosmetics (Atkinson & Kim, 2015; Watnick, 2014).

Cosmetics contain many ingredients that are known to negatively impact human health, yet, there is currently not much regulation in the United States to control the use of these ingredients in cosmetic products (Watnick, 2014). The result is consumers are subjected to chemicals in ways that may not be coupled with awareness or even understanding, yet there is an expectation of trust due to scientific research and the credence of these experts. According to Hodges (2015), “The main distributors of discourse about chemicals are corporations and governmental organizations. Thus, [consumers are] receiving health messages that are economically and politically motivated, not necessarily health-motivated” (p. 630). Based on this idea of consumer exclusion, this thesis research aims to understand and implement consumer opinions of cosmetic regulation in the United States. This research ultimately concludes that

consumer's opinions and perceptions do not align with current cosmetics policy in the United States.

Research question

Do the existing U.S. policies that have been designed to protect consumers from harmful chemicals in cosmetics match the expectations and perceptions held by cosmetics consumers about the regulations in place to protect them?

Significance

The current analyses surrounding cosmetics that inform this thesis do not directly consider consumer opinions or the expectations from these policies. These areas of study include the analysis of cosmetics policies and regulations and cosmetic industry practices in the United States including the use of potentially harmful ingredients in cosmetics. The survey conducted for this thesis informs a proposed policy recommendation based on consumer opinions of current policy and proposed policies. Policy recommendations considering the opinions based on both the gaps of knowledge and knowledge of the consumers may help provide a more modern, inclusive, and appropriate regulation practices and policy of cosmetics in the United States. This research fills a gap in the literature by providing results from a survey of consumer and general public opinion then using that to propose policy rather than based off of strict scientist informed and policymaker opinions. The opinions section of this research is used for discussion on the significance of consumer and general public opinion and its relation to policy in this particular survey.

Practical and Theoretical Application

Within the current literature about the regulation of cosmetics in the United States, most of this research concludes that the United States lacks regulation that many other developed countries have. The existing research focuses mainly on the opinions of scholars, politicians, regulatory agencies, and cosmetics companies. The gap this research fills is the relation of consumers and their opinions and perceptions surrounding the policy. This research considers the significance of public opinion and policy, and how public opinion could inform a more representative policy in the United States. Furthermore, this research seeks to suggest that consumers can reach out to companies for what they expect from their products and cosmetics company practices.

Within the current literature and analysis of policy, the suggestions rely on policy change to happen based on the findings of scientists who study cosmetic ingredients. The research suggests to the policymakers that the findings around chemical exposure and health to back it should be considered when changing policy (Watnick, 2014). The literature also analyzes current and recent policy proposals brought forward by politicians to the House of Representatives or various other platforms (H.R. 1385, 2013).

The research in this thesis will be using the perceptions and opinions of consumers and the average citizen regarding cosmetics policy in the United States. The use of collecting and analyzing perceptions took place with the intention of involving citizens in decisions that impact their lives. Studies showing perceptions of consumers about specific products can lead to change in business practices by expressing favorable or unfavorable opinions on perceived practices such as green-washing, price, and diversity (Nyilasy, Gangadharbatla, & Paladino, 2014). This idea will be used in this thesis as perception and opinion of policy and then ultimately a

suggestion for better marketing/ manufacturing practices as well as cosmetics policy to match consumer perception and opinions.

Common methodological approaches in the current literature include case studies, policy analysis, policy comparison, scientific research, toxicology research, and biological impact research. While this thesis uses these findings to inform this thesis's methodology, the research in this thesis has taken a different approach by involving consumers to measure various aspects such as opinions on current policy, current knowledge, and opinions on proposed policy changes. These findings have been used to analyze further whether policy changes are necessary. This idea differs significantly from current research as, again, the current literature primarily focuses on the opinions and actions of the professionals and excludes the opinions and ideas of the average cosmetics consumer.

Roadmap of Thesis

This thesis starts in Chapter 1 – Introduction, by familiarizing the reader of thesis details in more broad terms. The chapter discusses background information such as the history of cosmetics policy in the United States as well as the success of the cosmetics industry in the United States today. The chapter continues, discussing human health concerns from potentially toxic ingredients in cosmetics, cosmetics policy and regulation in other countries, and recent cosmetics policy proposals in the United States. This chapter also addresses some environmental concerns such as the use of microbeads in personal care products, as well as the impact that some potentially toxic ingredients may have on wildlife. This chapter also includes recent popular culture events to achieve change for safe cosmetics.

The thesis continues onto Chapter 2 – Review of the Literature, which discusses the different concerns of researchers and scientific findings of some of the many potentially toxic

ingredients often included in cosmetics in the United States such as parabens, phthalates, lead, and mineral oil. The literature review continues, discussing policy suggestions that researchers and safe cosmetics advocacy groups would like to see and the opposing ideas on why these changes are not happening. The literature review will then talk about the current climate of cosmetics, and cover topics such as natural cosmetics successes and failures, natural product marketing, and the importance of consumer opinion and the power consumers have to enact policy change.

Chapter 3 – Methodology and Results, provides the methodology and results of this thesis. The methodology for this research included a 21-question survey conducted on Survey Monkey, shared via Facebook. Questions posed were based on current policy change suggestions by other researchers and scientists that suggest policy change. This survey received 340 complete responses that were further analyzed using descriptive statistics. For example, in instances where more than half of the participants chose an answer in any of the questions, it was considered the decision that those answer choices would be the ones suggested in the policy change suggestions based on consumer opinion as well as natural cosmetic marketing suggestions for cosmetics companies.

Chapter 4 – Discussion, discusses the individual question results of the survey. The discussion includes some possible reasons why answer choices were chosen and what those choices indicate for consumer opinions and policy change suggestions. The discussion also indicates expected or surprising findings from the survey. The chapter discusses all significant findings from the survey.

Chapter 5 – Conclusion, discusses the entire thesis findings from the introduction, literature review, methodology, results, and discussion. These integral parts of the thesis will be

discussed, demonstrating the significance of the research. The conclusion will include natural cosmetics marketing change suggestions as well as policy change suggestions, all based on the results of the survey by identifying current consumer knowledge and opinions.

BACKGROUND

According to *Forbes*, cosmetics are a multibillion-dollar industry, and growing (Sorvino, 2017). Policy around cosmetics is a relatively new development. Up until the early 1900s, there were no regulations around cosmetics in the United States. Women are the primary consumers in the United States making up anywhere from 70-80% of all consumer purchases, as such they are the primary consumers of many cosmetics as well. Due to high consumption of cosmetics, women may be disproportionally exposed to potentially toxic ingredients in their cosmetics (Brennan, 2015; Yang, 2016). In the past, many women have experienced adverse effects from their cosmetics containing toxic ingredients, such as the Lash Lure eyelash dye in 1933 that caused a woman by the name of Mrs. Brown to lose her eyes, and produced dozens of other tragedies for numerous women. This disastrous event was not the only situation in which harm to consumers occurred due to a lack of regulation to prevent it. Around this time, a similarly devastating incident occurred due to a lack of drug regulation. The use of a popular drug Elixir Sulfanilamide caused the death of over 100 people in 1937. Elixir Sulfanilamide was used for a variety of ailments from gonorrhea to a sore throat, and the FDA could not take the product off shelves. The only regulation at the time was from the Pure Food and Drug Act of 1906, and this failed consumers when the Elixir Sulfanilamide event occurred, and there was still no cosmetics regulation to prevent events like those from the Lash Lure eyelash dye (Akst, 2013; Kawalek, 2005; Tousley, 1941; Watnick, 2014).

The people of the United States demanded change to prevent more calamities from toxic drugs and cosmetics. The Pure Food and Drug Act of 1906 was only minimally directive. The act only had requirements for manufacturers to put a warning label on products if they contained potentially harmful ingredients such as alcohol and opium. Furthermore, the Act established the FDA's duty to pursue and establish proof a product is unsafe before recall takes place (Sobel, 2002; Watnick, 2014). After so many incidents as a result of unregulated cosmetics, and coincidentally after women gained the right to vote in 1920, the Federal Drug and Cosmetic Act was enacted by the Food and Drug Administration (FDA) in 1938 (Watnick, 2014).

The Federal Food, Drug, and Cosmetic Act of 1938 was the first time cosmetics had ever been under regulation, and their regulation was not as strict as it was for the food and drugs (Tousley, 1941). The regulation required that all known dangerous cosmetics be banned (e.g., Lush Lash eyelash dye) and that those cosmetics containing ingredients that may be harmful should be labeled as such. This act banned obvious dangerous cosmetics and ingredients and did not particularly include any specific ingredients of restriction. This act was the long awaited regulation that ensured the disallowance of obviously poisonous cosmetics or cosmetic ingredients. Before this, no such laws or regulations existed and these dangerous cosmetics and ingredients were unregulated and technically allowed for use. Such ingredients included thallium acetate, which was also used as a rat poison and other cosmetics contained ingredients like mercury at dangerously high levels, causing horrific effects (Eschner, 2017).

The Federal Food and Cosmetic Act of 1938 further prohibited the misbranding of products, including falsely advertising a product by stating it would do something it is not capable of doing. The Act additionally mandated that color additives such as coal-tar colors that were "harmless and suitable for use in food, drugs, and cosmetics, other than coal-tar hair dyes

which had been determined as safe, be listed in cosmetic labeling. Cosmetics companies opposed these changes as they were fearful of listing their ingredients and acquiring competition, while consumers felt right about the Act so they could avoid ingredients they may be allergic to (Tousley, 1941). This new act was a necessary action but one that has not modernized its self with contemporary cosmetics practices.

Since the time that the FDA took over cosmetics regulation, there have not been many amendments or changes aside from the Color Additive Amendments of 1960 (Watnick, 2014). The Color Additive Amendments of 1960 formally defined "color additive" and required that only color additives listed as "suitable and safe" for their given use could be used in foods, drugs, cosmetics, and medical devices. Under these amendments, the roughly 200 color additives that were in commercial use at the time were for the time being listed as "suitable and safe" and could be used on an temporary basis until they were either permanently listed or terminated due to safety concerns or lack of commercial interest. Permanently listing a color additive for a proposed use was prohibited unless scientific data established its safety. The 1960 Amendments also prohibited the listing of a color additive shown to be a carcinogen. After 1960, FDA gradually removed color additives from the provisional list either by permanent listing or by termination of listing. Today about half of the "1960" color additives remain listed (U.S. Food & Drug Administration, 2017a).

The Color Additive Amendments of 1960 and the list of 11 banned ingredients are currently the only cosmetic ingredient regulatory practices to which manufacturers must strictly adhere. If companies do not follow these rules regarding misbranding, adulterating, or containing color additives that are not listed as "suitable and safe", they can be taken to court by the FDA, and if found guilty of being misbranded, a mandatory recall of the products in question will then

take place (Daum, 2006; Watnick, 2014). This practice is the only way a mandatory cosmetic product recall can take place in the United States.

The precautionary principle from the 1990s sparked action in the UK and Canada. The UK decided to ban over 1300 products that they deemed potentially dangerous. The US banned only 11 (The European Parliament and the Council of The European Union, 2009; Watnick, 2014). There are an estimated 12,500 ingredients included in cosmetics. Only around 1,400 of these ingredients have been tested, leaving around 80% untested for potential adverse health effects (Houlihan, 2018; Watnick, 2014).

Definitions

The law defines cosmetics as: "articles intended to be rubbed, poured, sprinkled, or sprayed on, introduced into, or otherwise applied to the human body...for cleansing, beautifying, promoting attractiveness, or altering the appearance" (Federal Food, Drug, and Cosmetic Act, 1938). This definition is utilized when referring to cosmetics in this thesis.

For this study, identifying potential solutions to the proposed issue of consumers using general cosmetics that typically contain potentially toxic ingredients, it was decided that natural cosmetics are a practical alternative. When consumers are trying to avoid potentially toxic ingredients for whatever reason they are choosing, they typically go for the "green" alternative to the same product (Todd, 2004). "Natural" cosmetics will be used in this paper as a broad term for any cosmetics claiming to be green, free of harsh or potentially toxic chemicals, or environmentally friendly, exist as a seemingly ethical and safe alternative to for consumers who are concerned about potentially toxic ingredients (Todd, 2004).

Human Health: Cosmetics and Different Uses among Different Demographics

It is presently inconclusive whether or not skin, the body's largest organ, can be substantially impacted by absorbing too much of what is applied or exposed to the skin. Although the primary job of skin is to act as a barrier to outside forces, it is still unknown exactly how permeable skin is and how many substances impact skin when skin is exposed, and if prolonged use of a substance exposes skin to more harm from a buildup in the bloodstream (Zhu et al., 2016). There have been findings such as research showing that sunscreen UV filters are absorbed through the skin and excreted through urine, and that sunscreen chemicals have been found in the skin at above what is considered safe levels. However, sunscreen is still widely considered safe if applied as instructed. The conclusion of safety is because the skin's many layers trap toxic chemicals before they reach the bloodstream so cosmetics may not be as impactful as some conclude (Montenegro et al., 2018). Despite this consolation, there is still skepticism about the safety of cosmetics due to skin absorption.

Women are the primary consumers of cosmetics and women have also historically been subject to a lack of recognition and representation in policy (Darden & Worden, 1994; Daum, 2006). There have been links of many cosmetics to endocrine disruption, breast, and ovarian cancer, as well as congenital disabilities in offspring (Smith & Lourie, 2009; Daum, 2006; Watnick, 2014). These chemicals include phthalates, parabens, lead, and mercury, to name a few (Zota et al., 2017). Additionally, there is a cumulative risk assessment that the EPA has taken part in when considering environmental risks. The risk is still currently unknown for human health when considering the many factors that come into play for an individual's health (U.S. Environmental Protection Agency, 2003).

Moreover, the risk for exposure to toxic chemicals is increased for ethnic groups and to low-income communities (Morrello et al., 2011; Watnick, 2014). These exposures are attributed to the chemicals from hair relaxers and skin lighteners. The hair relaxers contain chemicals like parabens, which are endocrine disruptors and increase the risk for various issues such as breast cancer and ovarian cancer (Watnick, 2014). Many low-income communities, which frequently include a high ethnic population, live near environmental stressors such as toxic waste sites, freeways, and manufacturing companies, are additionally exposed to the chemicals in the products they use. This overexposure can have health implications that impact generations to come from congenital disabilities or diseases among many other possibilities (Zota et al., 2017; DeFur et al. 2007).

Further, there is a large global market for male cosmetics that only continues to grow (Thota et al., 2014). Diagne and Souiden (2009) wrote that L’Oreal surveyed European men on their use of cosmetics. Initially, in 1990, only 4% of men reported to wear or use cosmetics. By 2001, 21% of men reported wearing cosmetics and projected that by 2015 it would be around half of the general male population.

This growth is evident in a global survey conducted by Datamonitor in 2015, the survey asked men a variety of questions pertaining to why they use cosmetics, their attitudes toward cosmetics, what cosmetics they use, and how often they use them. The results showed that men primarily use cosmetics as it relates to shaving but there is a growing market for cosmetics that relate to improving appearance such as covering blemishes and styling hair. The survey showed that men in North America have nearly identical feedback to men in Europe in that around 50% of men surveyed believe their looks are important, and around 40% of men are willing and do purchase cosmetics in order to improve their appearance (Mills, 2015). A 2017 survey stating

that almost half of men in the UK report that they use cosmetics products daily (Jones, 2018). While this demographic is from the UK, it does portray a male population similar to that of the United States that expresses their use of cosmetics as according to prior data stating their attitudes and consumption habits are nearly identical in the continents.

Furthermore, famous YouTube stars such as the first male “Cover Girl,” James Charles, and beauty vlogger, Patrick Starr, have become popular in recent times with James Charles’ historic deal with the cosmetic company Cover Girl and Patrick Starr’s collaboration with the successful cosmetic brand, Mac Cosmetics. These YouTube stars each have millions of subscribers on their Beauty Vlog YouTube channels where a reported 11% of the subscribers are male (Jankowski, 2018). There are a wide variety of cosmetics that males may be using today. Diagne and Souiden (2009) state many cosmetics companies have created products for men such as L’Oreal and face creams, anti-wrinkle creams, bronzing products, hair coloring and toning gels. The same cosmetics companies that market their products primarily to women make many of these products for men; and these male-intended products still contain much of the same potentially toxic ingredients that cosmetic products typically designed for women contain (Nassan et al., 2017).

Overview of Current United States Cosmetics Policy

Currently, under the regulation of the Food and Drug Administration, the cosmetics industry is not FDA approved, but it is FDA authorized. This means that cosmetic products do not have to be FDA approved, but the FDA is still the regulatory agency of said products. Cosmetic manufacturers are not required but are encouraged by the FDA to do safety checks on their ingredients (Watnick, 2014). The Cosmetic Ingredient Review Panel (CIR) came to be in the 1970s and is a panel of scientists and doctors that review the safety of ingredients used in

cosmetics. It is estimated that only 13-20% of ingredients in cosmetics have been reviewed by the panel (Daum, 2006; Houlihan, 2018).

There are many potential reasons for why companies choose to include potentially toxic ingredients in their products. The main reasons being that they are not restricted and are the current practice in the cosmetic industry (Watnick, 2014; Thomas, 2014). There is not much incentive for companies to self-regulate because the risk of finding unsafe ingredients could cause significant monetary loss and recalls that a company would most likely want to avoid (Watnick, 2014). Furthermore, cosmetics companies are not required to report any adverse effects complaints to the FDA that their products may have received. For example, the Wen Hair Care Company has acquired many complaints of skin irritation and even hair loss. These products are still allowed on the market despite the fact that it is unknown what is causing the adverse effects (Edgar, 2018).

Overview of Cosmetics Policy in Other Countries

Policy regarding cosmetics in the United States has not developed much since being introduced in the 1930s and is primarily reactionary rather than precautionary. Other countries, like those in the EU, have much stricter guidelines for their products. Regulation for Registration, Evaluation, Authorization, and Restriction of Chemicals – REACH is the EU's chemical regulation enacted in June 2007 to improve the protection of human health and the environment. REACH works by requiring companies to register their ingredients and are encouraged to work with other companies registering the same ingredients. The European Chemicals Agency, ECHA, receives the registrations and evaluates them individually to ensure their adherence to the strict rules in place by REACH. The EU member states individually select questionable substances to clarify initial safety concerns. Authorities and ECHA scientific

committees then decide if the substances risks are manageable. If the risks are found unmanageable, then they could restrict the substances' use in products (European Chemicals Agency, 2018; European Commission, 2016).

Japan used to have stricter regulations when it came to cosmetics but it has since cut back to have regulations similar to the United States for the convenience of not having to preapprove each individual product, which was the former regulatory practice (Watnick, 2014). In Canada, the regulation is similar to those in the EU with the ability to bring forward potential concerns for any ingredient and have the safety of the ingredients tested and made sure they are taken care of effectively for consumer safety (Watnick, 2014).

RECENT COSMETICS POLICY ACTION IN THE UNITED STATES

H.R. 1385 Safe Cosmetics and Personal Care Products Act of 2013

Throughout recent years there have been several bills introduced seeking to enact policy changes in the cosmetics industry from several state representatives. In 2013, Democratic Representative Janice Schakowsky introduced the bill H.R. 1385, the "Safe Cosmetics and Personal Care Products Act of 2013," in the House of Representatives. The bill would have amended the Federal Food, Drug, and Cosmetic Act to provide for the regulation of cosmetics by the Secretary of Health and Human Services (HHS).

The bill brought forward many ideas for change. It would have required any brand that brings a cosmetic to the market for use in the United States to register annually and pay a fee for oversight and enforcement of the Act brought forth. In addition, it would have also required that the United States establish labeling requirements and safety standards that provide a reasonable certainty of no harm from exposure to a cosmetic or ingredient in a cosmetic. Further, it would

have required the brand owners to submit safety data for the ingredients listed on their product labels. These ingredients would be published in a proposed database; and it would have required the FDA to review and evaluate the safety of cosmetics and ingredients of cosmetics that are on the market including nanotechnology and contaminants of concern (H.R. 1385, 2013).

The bill also required that the FDA establish three lists for ingredients: a prohibited and restricted list; a safe without limits list which means no matter how much it is used it is safe; and a priority assessment list. The bill also would allow the FDA to order a recall or cease distribution for a cosmetic that is misbranded or in any violation of the Federal Food, Drug, and Cosmetic Act. It would require reporting of any severe adverse event associated with cosmetics; require the FDA to take action to minimize animal testing of ingredients and cosmetics; establish an interagency council on cosmetic safety; and require that the Secretary of Labor come up with occupational safety and health standards relating to cosmetics for professional use. H.R. 1385 was introduced in 2013, and it never went past that stage (H.R. 1385, 2013).

S. 1014 – Personal Care Safety Act

A bill similar to H.R. 1385 was introduced in the Senate by California Democratic Senator Dianne Feinstein on April 20, 2015, called the “Personal Care Safety Act” (S. 1014). This bill would have also amended the Federal Food, Drug, and Cosmetic Act. It would have required cosmetic companies to register their facilities with the FDA and to submit to the FDA cosmetic ingredient statements that include the amounts of the cosmetics ingredients, as well as pay a facility registration fee based on their annual gross sale of cosmetics. The collected fees would only be used for cosmetic safety activities (S.1014, 2015; H.R.1385, 2013).

S. 1014 also determined that if the FDA were to find that a cosmetic has the reasonable probability of causing serious adverse health consequences that it may ban the cosmetic’s

distribution by suspending the cosmetic ingredient statement. Additionally, if other cosmetics from the same facility were affected, the FDA would be able to prohibit distribution from the facility by suspending the facility's registration. Under this bill, the FDA would have to review the safety of at least five cosmetic ingredients every year and establish conditions for safe use of an ingredient. This practice would include a limit on the amount of the ingredient or a requirement of a warning label. A cosmetics product would not be suitable for sale if it contained an ingredient that is not safe under the recommended conditions of use or in the amount present in the cosmetic (S.1014 2015).

The cosmetics companies under S. 1014 would have been required to report to the FDA any severe adverse health event associated with their cosmetics, similar to H.R. 1385. S. 1014 would also require the FDA develop and implement cosmetic manufacturing standards that are consistent with existing national and international standards. The FDA would have been allowed to inspect a company's cosmetic safety records, recall a cosmetic that is likely to cause serious adverse health consequences and, like H.R. 1385, encourage cosmetic safety testing with minimal use of animals. This bill was also only ever introduced and no further action was ever taken before the bill proposal ultimately expired (S. 1014, 2015; H.R. 1385, 2013).

H.R. 575 – Cosmetic Modernization Amendments of 2017

Republican Congressman Pete Sessions from Texas introduced a bill in early 2017 called H.R. 575 – Cosmetic Modernization Amendments of 2017. This bill is less aggressive than the bills introduced in 2013 and 2015, but it is still progressive for change in the cosmetics regulation. This bill would amend the Federal Food, Drug, and Cosmetic Act to bring forward governing requirements by the FDA, including requiring the registration of the manufacturing establishment and the submission of an ingredient statement for each cosmetic. The FDA would

also have to publish a list of registered establishments and a list of cosmetics and their ingredients. The cosmetic manufacturers, packers, and distributors would be required to report to the FDA any serious and unexpected adverse events likely caused by a cosmetic. There is also a proposed label requirement with contact information to report a severe adverse event (H.R. 575, 2017).

Furthermore, in H.R. 575, the FDA would be able to establish principles and standards for good manufacturing practices of cosmetics. For example, if a cosmetic presents a significant risk of severe adverse health consequences because it was not manufactured with the good manufacturing practices, its sale would not be approved. The bill also suggests that current ingredients are deemed safe for use in cosmetics unless restricted by the FDA, and the FDA must create a program to evaluate the safety of cosmetics and their ingredients.

H.R. 575 proposes the FDA must establish and maintain a National Cosmetic Regulatory Databank that contains submitted information on cosmetics. Furthermore, H.R. 575 would establish a system where private business and trade secret information may be disclosed only to state agencies that request the information for good and reasonable cause. The bill additionally introduces the FDA ability to establish exemptions to requirements, so that implementation and compliance are cost effective. Further, the bill proposed that color additives that the FDA has not listed as suitable and safe, but are generally recognizable safe, are allowed for use in cosmetics. This bill proposed that state and local governments may not establish or continue specified requirements relating to cosmetics and that cosmetics importing may only be allowed from registered establishments that have submitted a cosmetic and ingredient statement. As of May 2018, the bill has not gone further than being introduced. It was passed on to the House Energy

and Commerce Committee, where it now has only an estimated 8% chance of becoming enacted (H.R. 575, 2017; Civic Impulse, 2018).

Individual States Cosmetics Ingredient Policies

Despite the failure on the national level, a few states in the U.S. have taken action to put more regulation on cosmetics. In 2005, the state of California enacted The California Safe Cosmetics Act, which requires companies to report any ingredients that are on the state or federal lists of ingredients that cause cancer or congenital disabilities (S.B. 484, 2015). In 2013, the state of Minnesota banned formaldehyde in children's personal care products. The ban on the use of formaldehyde applies to products intended for children under the age of eight (H.F. 458, 2013). In 2008, the state of Washington adopted the Children's Safe Product Act, which requires manufacturers of children's products sold in Washington to report to the state if their product contains a Chemical of High Concern to Children. The Chemicals of High Concern is a list of 85 different chemicals that are believed to be of high concern to children when used in products such as toys and personal care products (Department of Ecology Washington State; 2018).

COSMETIC INGREDIENT ENVIRONMENTAL IMPACTS

Endocrine Disrupting Chemicals Impacts on Wildlife

Endocrine Disrupting Chemicals (EDCs) are currently present in many cosmetics in the United States. Their impacts on wildlife are unknown as these are hard to detect on an individual animal and that individual animal's impact on their larger communities such as their offspring (Jobling & Tyler, 2006). EDCs may impair wildlife in the same ways they can potentially affect humans, through their endocrine system, potentially impairing reproduction and causing

congenital disabilities in offspring. These EDCs find their way into the wildlife through wastewater and other means when being dispersed through cosmetics.

Microbeads

Microbeads are part of a larger group called microplastics. Microplastics are described as tiny plastic particles used in everyday products such as facial and body scrubs and cleansers, toothpaste, and household cleaning products. These microbeads are designed to be washed directly down the drain where they inevitably find their way into waterways. The Microbead-Free Waters Act of 2015 commenced the ban of Microbeads in U.S. consumer cosmetic products (H.R. 1321, 2016). This microbeads ban happened even before the proactive United Kingdom banned microbeads in their products, which happened in early January 2018 after deciding that the environmental impacts are too grave (Tunnickliffe, 2018).

Microplastics have been found in abundant amounts in the stomachs of aquatic life throughout the world's many bodies of water including lakes and oceans. The average tube of facial cleanser that contained microbeads was discovered to have 330,000 microbeads, which go directly to bodies of water when rinsed off in sinks and showers. These microbeads are confused for aquatic foods, and every level of aquatic life ingests those, even organisms as small as plankton due to the microplastics small sizes. These microplastics are bioaccumulated as they are fed through the aquatic food web and eventually reach humans as humans consume fish (Truslow, 2017; Alternatives Journal, 2015; Sigler, 2014; Cózar et al., 2014; H.R. 1321, 2015).

Opposition to the ban of microbeads assumes the position that current research around microbeads is still in the early stages and fails to address more pressing, already present pollution issues (Burton, 2015). A study done by University of Michigan researchers sought to find how many microplastics were in aquatic life in some lakes in Michigan. They found no microplastics

in those fish but, in 11-36% of the fish, they found wool and synthetic fibers, which are also harmful to aquatic life as these fibers are larger and become entangled in fish's digestive systems. Microplastics are typically excreted after consumption by aquatic life while these fibers are not natural or easy to digest (Burton, 2015; Plastic Particle Counts in the Great Lakes, 2015).

Microbeads are only a small factor in human-caused environmental threats. Several other threats due to agricultural and urban land use have been ignored while the microbeads ban has caught on. The Microbeads-Free Waters Act, while progressive, still fails to address the already massive amount of microbeads currently in the water and fails to find ways to fix to this issue but instead seeks to prevent further environmental harm (Truslow, 2017).

CONCLUSION TO INTRODUCTION

Human exposure to toxins occurs on a daily basis, and what may be surprising to some is cosmetics are not highly regulated in the United States to limit consumer exposure to these toxic chemicals. Cosmetics and their ingredients have many human health implications as well as environmental health impacts. Cosmetics regulations are conducted thoroughly in other developed countries such as those in the EU and Canada.

Policy suggestions have been proposed to Congress several times but have not made it past the point of introduction. Cosmetics regulation in the United States has an extensive history and impacts consumers from all walks of life. While some are more at risk than others, all cosmetics consumers are impacted by the cosmetics policy and the ingredients allowed in products in the United States and this thesis seeks to give these consumers a voice on whether or not they are okay with these policies in place to protect them.

CHAPTER 2 – REVIEW OF THE LITERATURE

INTRODUCTION TO REVIEW OF THE LITERATURE

Cosmetics regulation has some significant discrepancies among many groups that are involved in cosmetics policies in the United States. Much of the literature for and against policy change in cosmetics vary in their opinions on what is safe, why regulations are in place, if these regulations are effective, and comparing practices in cosmetics regulation around the world. There are several opposing ideas on what should or should not be considered safe. The divergence is primarily in cosmetics manufacturing practices and what ingredients are considered safe and are allowed in cosmetics sold in the US. Other areas of disagreement around cosmetics policy in the United States concern the current regulatory practices of cosmetics by the US Food and Drug Administration.

Conventional cosmetics that may contain potentially toxic ingredients have a viable alternative to their use which is natural cosmetics. Natural cosmetics come with their own barriers making them potentially unavailable to consumers who may want to use them. Consumers have valuable opinions and have been considered in policy decision-making in other realms of consumption but are not formally active in cosmetics policy-decision making in the United States. When consumers do not have the option for policy change, voting with their wallets has been said to have a political backing by driving the marketplace to deviate their practices to match these consumer desires which could be a possibility with natural cosmetics consumption, but not if there are so many barriers preventing this action from working effectively.

Each of these differing opinions and ideas are implemented into the creation of the thesis survey that answers the thesis research question on whether or not consumer opinions and perceptions are met by current cosmetics policy in the United States.

POTENTIALLY TOXIC INGREDIENTS IN COSMETICS IN THE UNITED STATES

Several well-known ingredients are suspected to be dangerous and are currently present in many cosmetics. Most of the existing research against potentially toxic chemicals include talk against common cosmetic ingredients such as parabens, phthalates, lead and mineral oil to name a few. There are still many more concerning ingredients that are used commonly in cosmetics in the United States.

Parabens

Parabens, which are a class of widely used antimicrobial preservatives in cosmetic and pharmaceutical products, have been suspected as being potentially toxic due to the preservatives acting as estrogen-mimickers (El Hussein, Muret, Berard, Makki, & Humbert, 2007; Jagne, White, & Jefferson et al., 2016). To be an estrogen-mimicker means that parabens metabolize in the body as estrogen, mimicking the effects of estrogen, triggering specific receptors to actual estrogen and blocking the action of the natural estrogen hormone (El Hussein et al., 2007; Jagne et al., 2016; Watnick, 2014).

Parabens are in many cosmetics items such as eyeshadows, eyeliners, mascaras, foundations, shampoos, conditioners, facial cleansers, and much more (Andersen, 2008). Parabens are desirable for their antimicrobial preservative properties preventing mold and yeast from growing when used in products. They are also ideal due to their low production cost, chemical stability (ability to withstand a wide range of temperatures and acidity levels),

supposed low toxicity, and worldwide acceptance (Cashman & Warshaw, 2005; Jagne et al., 2016).

There is currently no limit on the dosage of any kind of parabens in cosmetics in the United States. The EU does allow parabens but has restricted five different parabens: isopropylparaben, isobutylparaben, phenylparaben, benzylparaben, and pentylparaben, all of which are allowed in cosmetics in the United States (United States Food & Drug Administration, 2018). The EU has concluded that methylparabens and ethylparabens are safe in the amounts they are used in cosmetics, which is a maximum concentration of 0.4% to 0.8%. The FDA claims methylparabens and ethylparabens are among the most common parabens used in cosmetics in addition to propylparaben, butylparaben (Official Journal of the European Union, 2014; US FDA, 2018b). These EU regulations differ significantly from the United States, as there is no maximum concentration in the use of parabens in cosmetics products (US FDA, 2018b).

Estrogen mimickers have suspected links to breast cancer, low sperm count, hormonal changes impacting insulin resistance, and other various congenital disabilities (Daum, 2006; El Hussein et al., 2007; Jagne et al., 2016, James-Todd, 2012; Watnick, 2014). Parabens have been found intact at unusually high amounts in breast cancer patients (Darbre et al., 2004; Darbre & Harvey, 2014). However, the findings of high amounts of parabens in breast cancer patients by Darbre et al. (2004) fail to undeniably connect parabens to breast cancer.

There are some potential issues with the Darbre et al. 2004 study, which concludes with the alleged correlation of breast cancer and the use of personal care products containing parabens. Potential issues of the Barr et al., 2004 study include the fact that the study found high amounts of parabens in the negative control group, which has been prescribed to contamination. This finding has been said to cast doubt over the validity of the actual test samples as

contamination occurred in the negative test samples which further suggests contamination may have occurred in the positive test group used to conclude the correlation (Godfrey, 2008).

Since the discussion over the legitimacy of the Barr et al., 2004 study, a more recent study by Barr et al. (2012) has since confirmed that intact parabens can be measured in higher than average amounts in human breast tissue as there was no instance of contamination in the positive test findings. The FDA has acknowledged that parabens are an estrogen mimicker and that estrogenic activity is a cause of breast cancer (Smith & Lourie, 2009; US FDA, 2018b; Watnick, 2014).

Phthalates

Phthalates, another ingredient of common concern in cosmetics are also suspected of being endocrine disruptors and have potential links to congenital disabilities in children. These abnormalities occur as de-masculinization of men by outcomes such as small male genitalia, human sperm DNA damage, and type 2 diabetes (Smith & Lourie, 2009; Wang et al., 2016; James-Todd, 2012). Phthalates are in cosmetics such as color cosmetics, shampoos, nail polishes, hairspray, and fragranced lotions. They have traditionally been used in products such as nail polish and hairspray as plasticizers to provide the stiffness of these products when applied. Phthalates are also often used in these cosmetics to enhance fragrances (Watnick, 2014). Phthalates are found at varying levels in many different groups of people but are most dangerous to pregnant women and children. Phthalates are widely considered safe at the doses in cosmetics presently.

Phthalates have been linked to type II diabetes, especially in women. In a study by James-Todd et al. (2012), the higher discovery of phthalates in the urine of women closely correlated with a higher risk of type 2 diabetes. This conclusion stems from the idea that

phthalates are suspected to be part of a group of EDCs that can alter adiposity and insulin resistance. Furthermore, women have a higher amount of phthalates found in their bodies. The higher amounts of phthalates are believed to be from women's higher use of personal care products that contain phthalates. The finding is also due to the extent, to which women store fat, which is more than men do (James-Todd, 2012; Hatch et al. 2008; Latini, 2005; Newbold 2010; Stahlhut, Wijngaarden, Dye, Cook, & Swan, 2007)

Two different forms of phthalates: dibutyl phthalates (DBP) and bis(2-ethylhexyl) phthalate (DEHP) have a ban on their use in the EU (Miljøstyrelsen, 2017). There are still phthalates allowed for use in manufacturing products including cosmetics, however, in 2017, Denmark successfully convinced the EU that phthalates are hazardous and they have since made their way on to the REACH list. The EU is planning to remove phthalates from all manufactured products due to this finding (Miljøstyrelsen, 2017).

Critical analysis of phthalate research has concluded that phthalates may be a cause of harm and result in the de-masculinization of men and other health impacts but their presence in cosmetics is so low there is not enough reason to believe that they are dangerous for overall human health and should be allowed for continued use in cosmetics (Witorsch & Thomas, 2010). Furthermore, phthalates can still be metabolized and detoxed from the body relatively quickly after less exposure (Smith & Lourie, 2009). Countering this acceptance, there is still common concern that phthalates should not be included at all in cosmetics due to their connection as endocrine disrupting chemicals (Smith & Lourie, 2009; Watnick, 2014; Wang et al., 2016). Additionally, continued exposure to phthalates through phthalate-containing products may be an issue over time (Smith & Lourie, 2009; Wang et al., 2016). The body may not have the ability to detox phthalates, and as a result, lasting damage may occur.

Mineral Oil

A typical ingredient in many different varieties of cosmetics such as lipstick and eyeshadow is mineral oil. Mineral oil is a byproduct of the distillation of gasoline from crude oil. The 2016 U.S. Department of Health and Human Services Public Health Service National Toxicology Program Report (14th edition) states that, “Untreated and mildly treated mineral oils are known to be human carcinogens based on sufficient evidence of carcinogenicity from studies in humans” (p. 1). The type of mineral oil used in cosmetics is the highly refined “white mineral oil.” This mineral oil is refined to rid the substance of carcinogenic qualities that are in non-refined mineral oil. Mineral oil that is not refined or lightly treated is typically used in transmission fluid and gear oils, which is considered carcinogenic at that point. These carcinogens are removed when mineral oil is further refined for use in cosmetics (Berkeley Wellness, 2017).

While the refining process is supposed to rid the substance of carcinogens, there is still concern that the refining process is not sufficiently effective and may introduce carcinogens to cosmetic wearers. Multiple studies have concluded that there is evidence for an accumulation of mineral oil saturated hydrocarbons (MOSH) through cosmetics use. Some of the hydrocarbons are strongly accumulated and form granulomas (small area of inflammation) in human tissues. There is belief that the bioaccumulation is due to prolonged use of products containing mineral oil (Concin et al., 2011; Niederer, Stebler, & Grob, 2016). The use of mineral oil in everyday products is believed to overexpose users to MOSH and thus poses a potential public health hazard as MOSH may include carcinogenic polycyclic compounds found in mineral oil (Niederer et al., 2016).

Mineral oil is also allowed in cosmetics in other countries such as the EU. Despite the allowed use of mineral oil, researchers like Niederer et al. (2016) and Concin et al. (2011) believe the use of mineral oil in everyday products may cause overexposure of users to MOSH. This overexposure poses a potential public health hazard as MOSH may include carcinogenic polycyclic compounds found in mineral oil.

Lead

While lead itself is not a common ingredient in cosmetics, amounts of lead are often found in cosmetics especially in eyeshadows and most commonly in lipsticks. Lead finds its way into cosmetics through other ingredients; most commonly, it enters from color ingredients that contain lead naturally (Brown, 2013). Lead exposure is linked to learning, language, and behavioral problems as well as delayed auditory and visual systems maturation in infants in even low-level prenatal lead exposure among other health concerns (Needleman & Schell, 1990; Silver et al., 2016) Lead is traditionally deposited in a person's bones, and as people age, bones demineralize and may subject people to lifelong lead exposure (Needleman & Schell, 1990)..

The FDA has concluded and recommended that lead up to 10ppm in cosmetics is a safe level as it is what they consider to be a minimal amount and not detectable in routine blood testing. Additionally, because lead is found most commonly in higher amounts in lipsticks than any other cosmetics product, any other cosmetic containing lead will automatically be less risky and will also not be detectable in routine blood testing. The recommendation by the FDA is that cosmetics companies should not include lead in their products at more than 10ppm (United States Food & Drug Administration, 2018a). Additionally, because lead is found in so many substances in day to day life it can become very difficult for companies to prevent lead from being found in their cosmetics. Lead is not a cosmetic ingredient but is sometimes present in

cosmetics ingredients themselves as lead is naturally occurring in the environment where much of the ingredients derive (Brown, 2013; Fioravanti, 2010).

The issue with the 10ppm threshold recommendation is that it is only recommended and not a requirement. In 2007 and 2008, the Food & Drug Administration (2018a) tested over 400 lipsticks and found that 99% of them contained less than the recommended 10ppm, meaning that some of the lipsticks they tested contained even more. The FDA also acknowledged that cosmetics imported from other countries often contain more lead than the recommended amount. However, the importing of cosmetics from these countries is still allowed as long as they do not contain any of the 11 banned ingredients, do not contain any outlawed color additives, and have proper labeling (U.S. Food and Drug Administration, 2017). While the ingredients in cosmetics are the culprits causing lead to be present in cosmetics, using different ingredients that do not contain lead may further minimize lead exposure to prevent any possible damage (Brown, 2013; Watnick, 2014).

Overexposure to Potentially Toxic Ingredients

The FDA and the Cosmetic Ingredient Review Panel (CIR) conclude that ingredients like parabens and phthalates are safe in cosmetics at the certain doses they are used (U.S. Food & Drug Administration, 2018b). The exposure to these small doses begs the question if there is bioaccumulation of the chemicals in the human body (Tsz, 2010). The countering opinion is that the small-scale use of one product a day may not do much harm. The continuation of exposure and the additional use of other cosmetic products that contain other potentially harmful ingredients are unaddressed risks in current safety testing (Watnick, 2014). When used as a standalone, a product may be safe, but with constant daily use combined with similar everyday cosmetic products, the combination may prove to be harmful over time.

IN DEPTH COSMETICS POLICY IN THE UNITED STATES AND ELSEWHERE

Labeling Laws

Misbranding or adulterations of cosmetic products are some of the only actions, which the FDA can take regulatory action against. A product being “misbranded” means it fails to do any number of things that it is required to do. An item may be "misbranded" if it's labeling is false or misleading. A product may also be "misbranded" if the cosmetics label does not conspicuously have all the required information, (all ingredients aside from exemptions and location of manufacturing), or if the product packaging is incorrect. Additional "misbranding" would include the finding that the product's packaging is dishonest, or the product contains an illegal color additive. Adulteration of cosmetics products is done mostly by the product containing ingredients that are illegal or known to cause harm to human health (United States Food & Drug Administration, 2018). These regulations regarding cosmetic labeling seek to prevent definitively known toxic ingredients making their way into cosmetics as well as to hold companies accountable and further inform consumers of their risks.

The FDA does have regulations inhibiting misbranded labeling, but they also can potentially list their ingredients as proprietary information and label these ingredients under words such as “fragrance” or “flavor” if that is what their use is in the product (Cosmetic Labeling, 2018; Watnick, 2014). Additionally, there are no requirements cosmetics companies have to follow to label their products as “organic” or “natural.” This allowance is because the FDA has not defined the term “natural,” and has not established a regulatory definition for the term in cosmetics labeling either; the same goes for “organic” as it is the U.S. Department of Agriculture who has defined organic and not the FDA. Terms such as “natural” are not to be

used in ingredients but are allowed to define the cosmetic product if the manufacturer or seller deems it as such without being misbranded (Northen, 2011; Perrini, Castaldo, Misani, & Tencati, 2010; U.S. Food & Drug Administration, 2018c). “Natural” and “organic” cosmetics should have a definition and should be regulated under the FDA to fit this definition so as not to misbrand them and mislead consumers with false claims (Northen, 2011; Perrini et al., 2011).

Cosmetic Safety Testing Regulations

In response to the question “Who is responsible for substantiating the safety of cosmetics?” the U.S. Food and Drug Administration (2018) writes on their website in an article titled *FDA Authority Over Cosmetics: How Cosmetics Are Not FDA-Approved, but Are FDA-Regulated*, “Companies and individuals who manufacture or market cosmetics have a legal responsibility to ensure the safety of their products. Neither the law nor FDA regulations require specific tests to demonstrate the safety of individual products or ingredients. The law also does not require cosmetic companies to share their safety information with FDA”. The FDA additionally states that a manufacturer may use any ingredient in the formulation of a cosmetic product provided that it is properly labeled, does not contain restricted ingredients, and the ingredient does not cause the product to be adulterated or misbranded in any way (U.S. Food & Drug Administration, 2017c). In response to this regulation practice, Watnick wrote: “To begin to protect human health, Congress must pass legislation requiring pre-market safety testing of cosmetics ingredients and products” (2014, p. 624).

Moreover, companies and individuals who manufacture or market cosmetics to ensure safety do not have much incentive to do so. They are not required to report their findings even if they find their products to be unsafe, and it would not be in their best interest to do so (Watnick, 2014). Cosmetics companies can freely choose to either test or not test the safety of their

products and, even if they do testing, they may choose to keep the findings private so as not to repel customers or risk having their products being labeled as misbranded or adulterated and taken off shelves.

The FDA is not subject to perform pre-safety checks before cosmetics products hit the shelves as they are considered the post-market regulatory agency. With their post-market authority, the FDA is still not able to recall the items from the shelves if they find items to be harmful or potentially harmful. They have to go through the court systems to have cosmetic manufacturers recall a product (Daum, 2006; U.S. Food & Drug Administration, 2018b; Watnick, 2014). The FDA can recommend cosmetics firms take a product off shelves if they deem it to be hazardous. The FDA cannot require a cosmetic product to be taken down and can only do this by taking them through the court system to determine whether or not the product is “guilty” (Daum, 2006; U.S. Food & Drug Administration, 2018b; Watnick, 2014).

The FDA currently relies heavily on the CIR panel for conclusions on ingredient safety. The CIR panel does safety testing and has an ambitious schedule to do so but there is some potential issues with their practices. The CIR panel currently bases their conclusions on acute reactions such as skin reactions or allergic reactions as opposed to chronic health impacts that may result from the ingredients (Daum, 2006). The FDA has predicted that there are over 12,500 ingredients used in cosmetics and the CIR has reviewed only about 13-20% of these ingredients and has only found 11 to be unsafe while other countries chemical safety have determined many of the same and other ingredients to be unsafe (Cosmetic Ingredient Review, 2018; Daum, 2006; U.S. Food & Drug Administration, 2017b; Watnick, 2014). Furthermore, while the CIR claims to act independently from cosmetics industries, the CIR panel is funded by the cosmetics industry

itself, which may influence whether or not some ingredients are determined to be safe (Cosmetic Ingredient Review, 2018).

The FDA does not require cosmetics companies to register with them. The only registration program the FDA has is the Voluntary Cosmetics Registration Program (VCRP). VCRP takes note of the cosmetics ingredients, registration of manufacturers, packers, and distributors. This program is entirely voluntary, and the number of companies who register with this program vs. the number of companies who do not is currently unknown due to the registration being optional and not required, the FDA cannot disclose the information. The non-disclosure by the FDA is done so as not to incriminate any companies who choose not to participate as once again, it is voluntary. The use of the VCRP is in place currently to inform the FDA of the ingredients of cosmetic products to ensure that they are adhering to FDA regulation (Mason, 2008; U.S. Food & Drug Administration, 2018c) While this program seeks to do well, there is concern that the voluntary aspect lets companies with less than desirable ingredients and practice scathe by without first proving their safety (Mason, 2008; Watnick, 2014).

In the EU, products cannot be put on the shelves until the ingredients are proven safe for human use. A recent regulation put into effect in July of 2013 ensured that any product must be taken down from shelves and recalled at any point if there is suspicion of risk. Under the new regulation, manufacturers, importers, and any other applicable parties must take corrective action immediately, which includes recalls and reformulation before approval to sell again (United Kingdom Government, 2013). Comparatively, in the US, products are allowed on shelves without safety testing and can be labeled saying there are no known risks. The products cannot be taken off the shelves until they are proven to be harmful, and that requires significant evidence to pass (Watnick 2014).

An example of differing regulatory practices, popular baby product company Johnson & Johnson announced plans in 2012 to stop using potentially toxic chemicals such as formaldehyde in their baby shampoo by 2013 and by 2015 in all their other products in the United States. This discovery surprised many consumers to realize that there were potentially toxic chemicals like formaldehyde in the shampoo in the first place (CBS News, 2012; Thomas, 2014). These ingredients had already been removed from the same products and in all consumer products in the EU after safety testing had classified formaldehyde as a human carcinogen (Campaign for Safe Cosmetics, 2011; Watnick, 2014).

Within Johnson & Johnson's PR statement in the US, they announced plans to stop using potentially toxic chemicals in baby products. However, they also acknowledged that these changes would not apply to their adult products such as the Aveeno and Neutrogena lines (Campaign for Safe Cosmetics; 2011). This is much different than the EU banning formaldehyde for all products vs the individual US company banning the ingredient in their baby products and not all products overall.

NATURAL COSMETICS IN THE UNITED STATES

For this thesis, natural cosmetics are the viable alternative to conventional cosmetics while cosmetics policy may not fully protect consumers from potentially toxic ingredients. There are many barriers to connecting consumers to natural products that have been identified in fields studying consumer responses to natural products (Cronin, 2011; Ottman, 2006; Ottman & Miller, 1999). There is a growing market for these products in the United States (Raphael, 2017; Transparency Market Research, 2017).

In a 2012 study by Royne, Martinez, Oakley, & Fox, it says that most common consumers in the United States (about 91%) want to take care of the planet and are environmentally concerned. They reportedly feel that if they do not take care of the planet, future generations will suffer. The same report says that about 78% of consumers believe that buying green is a way to consider their values and ethics in their shopping choices. Additional reasoning for purchasing natural products is the perceived health benefits in avoiding potentially toxic ingredients (Eisberg, 2009; Raphael, 2017). While the numbers of consumers who express concern for the environment and health by buying natural products is considerably high in the Royne et al., 2012 study, natural products, in general, have been scrutinized for a number of problems such as their price, greenwashing, lack of corporate social responsibility, manufacturing practices, and perceived inferiority.

The Price of Natural Cosmetics Products

A 2015 study by the online site intended to save consumers money by providing them with discount codes, RetailMeNot.com, found that 81% of common consumers in the US who use the site perceive environmentally friendly products as more expensive than their counterparts. Despite this, it is apparent that many consumers are still willing to buy these products for the health and environmental benefits as the natural products industry continues to grow (Skirboll & Nelson, 2015). The same study indicated that 89% of those surveyed consumers are willing to buy environmentally friendly products (Skirboll & Nelson, 2015). The ability to buy natural cosmetics and natural products in general is considered a privilege that many consumers are not granted as these products often are more expensive due to their production cost in using expensive, higher quality ingredients (Burton, 2017).

While this issue is difficult to address, cosmetics policy change may dissolve the issue if it is done to exclude the potentially toxic ingredients in cosmetics and implement higher quality and currently safe ones like those used in the EU. This change would potentially eliminate the need to choose between safety and economic ability. This would occur as all cosmetic products would not be allowed to use potentially toxic ingredients and could make the need to use cosmetics less as skin issues clear up and in turn make products more affordable as consumers buy less (Ottman, 2006; Moraes et al., 2011).

A 2017 study of 3,000 US women by beauty retailer, SkinStore, has revealed that in the United States, people spend an average of \$8 on their cosmetics through their use of an average 18 products (Johnson, 2017). This is in contrast to a 2018 a study of 1,000 women in the UK by Fragrance Direct in the UK found that the surveyed consumers spend an average of £2.39 euros (\$2.79) a day through their use of an average 12 cosmetic products (Teehan, 2018).

These daily cosmetics price variances reflect a disparity in the use of cosmetics in the two different countries but when dividing how much a product costs on average for these daily practices, in the US these products cost $\$8/18 \text{ products} = \sim\0.44 per product daily, and in the UK the product costs $\text{£}2.39 \text{ euros } (\$2.79)/12 \text{ products} = \sim\0.24 daily. These price inequalities in these countries suggest the prices of cosmetics in the UK and other EU countries are likely not impacted by their exclusion of over 1,300 different ingredients and their exclusion in the US would not have to change too drastically if other countries are able to manage and use safe ingredients without extreme price-hiking.

Greenwashing and Corporate Social Responsibility

Many natural product markets—especially natural cosmetics markets—have struggled with greenwashing, which is defined as “intentionally misleading or deceiving consumers with false claims about a firm’s environmental practices and impact” (Nyilasy et al., 2014, p. 693). Greenwashing is a strong possibility among natural cosmetics presumably because there is no law defining what a natural cosmetics requirements needs to be. Furthermore, according to Nyilasy et al. (2014), consumers are reportedly becoming increasingly skeptical of corporations who claim they are protecting the environment but fail to do so with their actions. This may be an additional barrier to consumers buying and using natural cosmetics.

Perceived greenwashing occurs when consumer reactions to situations where green advertising messaging, and actual corporate social responsibility interact (Nyilasy et al., 2014). This refers to a response of disbelief and skepticism by consumers in response to green product advertising by companies due to the corporations “green” actions or lack thereof. Corporate social responsibility refers to the concept that companies can incorporate social and environmental concerns into their business decisions, including both internal operations and interactions with stakeholders, such as other firms, consumers, and governments (Nyilasy et al., 2014). Overall, research has found that consumers want transparency from their companies they buy products from. They want a company that not only says they are going to address human health, the environment, or any other social concerns, but they want a company whose actions follow suit (Nyilasy et al., 2014; Perrini et al., 2010).

Furthermore, as stated previously, there are no requirements for natural cosmetics to be considered as such. While many consumers do not seem aware of this lack of requirement, this lack in itself does not bode well for natural cosmetics to avoid perceived greenwashing on their

own because there truly are no requirements. In order to avoid greenwashing, natural cosmetics companies should practice CSR's and perform as promised.

Jessica Alba began her entrepreneurial career with the Honest Company in 2011. In her words, she “founded The Honest Company because [she] wanted safe, effective products that perform. After all, [consumers] should [not] have to choose between what works and what's good for [consumers]” (Honest Company, 2018). The Honest Company boasts a supply of household products, baby care products, personal care products, and cosmetics. The Honest Company claims to formulate all their products without the more than 1,300 ingredients banned in the EU and an overall 3,000 and growing ingredient “NO List™.” The company also safety tests their ingredients and products and consistently reevaluates their findings based on new technology and the overall passing of time to evolve with their consumers. They strive to have label transparency and not contain ingredients labeled as “fragrance,” which is reported to be often included as an overarching cover up for potentially toxic ingredients (Honest Company, 2018).

While The Honest Company appears to hold itself to high standards of safety, the company is no stranger to scrutiny. The company has come under fire for perceived greenwashing for including ingredients that are synthetic or potentially toxic. In 2016, several products including their sunscreen and laundry detergent were reported to have contained a copious amount of sodium lauryl sulfate (SLS), which is a potential skin irritant. Honest responded back to the reports that they use sodium coco sulfate (SCS), which they believed to be safe. However, chemists attacked this statement saying that SCS manufacturing cannot happen without SLS and that neither compound can be considered natural (Ugolik, 2016).

After this mishap, the Honest Company was under a class action lawsuit and the company settled to pay \$1.55 million. The Class Members under this Settlement were allowed to be paid up to \$50 reimbursement without proof of purchase of the product and Class Members with proof of purchase were allowed for reimbursement in excess of the \$50. Any unclaimed settlement money was ordered to be disbursed among the Class Members or to skin research donation at the Dermatology Foundation. Despite the fact the company still vehemently denied all allegations of using SLS in their products, they wanted to get past the mishap and have since vowed to remove SCS from their products and formulate with an advanced sugar based surfactant technology to improve their products efficacy (Gaul, 2017).

While the route in which the Honest Company took to move forward with what consumers desired from their product was not without trouble, the company still ultimately showed upright CSR by listening to consumers, making the mishap right by paying consumers back, and vowing to formulate without SLS and SCS and additionally donating excess settlement money to skin research. This step differs significantly from the Johnson & Johnson event in which they promised to formulate their baby products without formaldehyde but continue use in their adult product lines (Campaign for Safe Cosmetics, 2018). Through all the pitfalls, it appears that the Honest Company has recognized the issues and taken action to improve their products while maintaining their mission statement, which is always to be evolving and growing with new research. Despite their controversies, the Honest Company continues to do well in the natural cosmetics market and is currently a billion-dollar company (O'Connor, 2016).

Jessica Alba announced in the end of May 2018 that the Honest Company's Honest Beauty cosmetics line is expanding to reach outside the US for the first time and is set to be available in Western Europe in April 2019 (Caldwell, 2018). This expansion is noteworthy as

Western Europe consists of EU countries that are known to be strict on cosmetics safety. The Honest Company and the company's growing success may indicate great respect and high trust from consumers due to the company's social responsibility in incorporating health concerns into their practices. This sort of integrity in the natural cosmetics market may be important as it sets standards that other companies may want to follow to achieve similar success even through difficult times such as the SLS mishap.

Consumer Perceived Inferiority of Natural Products

In a study by Ottman in 1998, the discovery was made that 41% of consumers indicate they do not buy natural products because of their perceived sense of inferiority, meaning that these products do not work as well as their classic counterparts (Ottman & Miller, 1999). Ottman (2006) writes of this that these attitudes may be coming from earlier attitudes toward natural products that were initially inferior. Natural products have since become not only just as efficient but may work even better than their conventional counterparts. For example, natural cosmetics may be easier on the skin and thus require less of the formula to cover up skin impurities that conventional cosmetics may have caused in the first place (Chen, 2009).

Unresponsiveness to Racial Diversity in Natural Cosmetics Products and Natural Cosmetics Marketing

Researchers have not paid much attention to the fact that manufacturers of natural cosmetics products may not cater to all skin colors, in particular darker ones. Recently the successful self-proclaimed natural cosmetics brand, Tarte, who coined the online hashtag #rethinknatural released a new foundation product – Shape Tape Foundation. Shape Tape Foundation was released to pair with the company's cult favorite – Shape Tape Concealer. The

highly anticipated foundation was released in January 2018 with 15 different shade options and two different formulations for the shades (Barbour, 2018; Bargona, 2018; Komar, 2018).

There was criticism following the release with complaints that Tarte's new 15 shade foundation line caters only to those of light skin complexions with only three of the shades being “dark” skin tones and the rest being very “light” skin tones. As a result, Tarte responded to the criticism with an apology to their customers, stating they are always going to advocate for diversity and they were still working on the darker skin tones that were pending release for a later date. The general response to this by dissatisfied consumers on social media was that the company should have waited to release the foundation so all consumers of every skin tone, light or dark, could feel included. Many consumers also stated they would be boycotting the brand due to the unforgivable intolerance and lack of inclusion for people of color (Barbour, 2018; Baragona, 2018; Komar, 2018) This is a large enough concern for consumers online so much so that they are willing to boycott the brand for making the mistake.

Tarte is not the only cosmetics company to have faced backlash as a result of perceived discrimination. Many other cosmetics companies such as the natural cosmetics company, Physicians Formula, whose website boasts its exclusion of over 150+ known harsh ingredients found in other personal care items (Physicians Formula, n.d.) and KKW Beauty by Kim Kardashian West have come under fire for similar reasons of excluding darker skin tones. These allegations come after Physicians Formula released a highlighter line that caters only to lighter complexions and KKW Beauty performed similar actions with the highly anticipated liquid concealer line excluding darker complexions (Bargona, 2018; Marsh, 2018; Ruffo, 2018) These incidents and further insight from consumers regarding exclusion in cosmetics and more

specifically natural cosmetics may be helpful for natural cosmetics companies not to duplicate the fault.

The Fenty Beauty Company created by singer Rihanna has received high praise by consumers of all colors after introducing her 40-shade foundation line in September 2017. Fenty Beauty's goal was to provide a matching foundation shade for everyone so that all consumers feel included (Nnadi, 2018; Shatzman, 2017). The company has achieved great success in its short time on the market with an estimated \$100 million in earnings within the first 40 days of release (Nnadi, 2018; Shatzman, 2018). This success may be due in part to her inclusion of people of color (Hope, 2016; Nnadi, 2018). While Fenty Beauty is not considered a natural beauty company, if every natural cosmetics company followed suit and stopped ignoring darker skin tones in their skin coverage, there would potentially be more room for success with the inclusion of all consumers.

Raising Awareness through Popular Culture

Another factor that may be deterring consumers from purchasing natural cosmetic products may be a lack of awareness about the potential hazards of their current cosmetic products (Eisberg 2009). However, more and more consumers continue to learn about the potential dangers of harsh chemicals found in their typical products, and many are switching over to natural cosmetics. Groups like the Campaign for Safe Cosmetics and the Environmental Working Group (EWG) along with celebrities and health blogs such as celebrity Gwyneth Paltrow's blog, "goop," are raising awareness for consumers. These sources are also potentially paving the way for a shift in the market for the growing natural cosmetics industry (Campaign for Safe Cosmetics, 2018; The Environmental Working Group, 2018; Goop, 2018; Raphael, 2017).

There have been recent attempts to bring cosmetics safety regulation to light among celebrities. Reality television star Kourtney Kardashian from Keeping up with the Kardashians went to Congress in Washington D.C. on April 24, 2018, to speak on cosmetics reform alongside Rep. Frank Pallone Jr. (D-N.J.). Kourtney addressed Congress in the briefing as she joined up with the non-profit organization, EWG. The organization and Kardashian have the primary goal of having modernized cosmetics reform. Their mission, #BeautyMadeBetter seeks to raise awareness for safer cosmetics and the need to update what they state are 80-year-old regulations. It appears they have goals such as limiting the number of certain chemicals allowed in a product (Brufke, 2018; EWG, 2018; Frey, 2018). By engaging in this activity, Kourtney Kardashian is broadcasting her beliefs of more cosmetics regulation in the US and sharing that view with her millions of fans.

Kourtney Kardashian stated becoming a mother is what alerted her to be aware of the ingredients in her products including food, cosmetics, and personal care products. She received gifts for her children that she assumed were safe because they are for babies (Frey, 2018). She stated that she learned from other “mom-friends” that the products were not safe. This story is one that rings a bell with many mothers including actress Jessica Alba who as previously stated founded the Honest Company. During Alba’s first pregnancy, she had an allergic reaction to laundry detergent that eventually led her to start the Honest Company, whose purpose is to provide products free of all potentially harmful ingredients, which can be in every consumer's home (Richie, 2015) While these were personal beliefs these celebrities, have taken their platform and acted upon their concerns not only as mothers, but also consumers and influencers and they done a lot to raise awareness to cosmetics regulation as well as come up with solutions to the problem.

Celebrities have a profound influence on American society as evident by Arnold Schwarzenegger's controversial election as Governor of California and the even more divisive election of Donald Trump as President of the United States (Fuchsman, 2017; McKernan, 2011). Celebrities may have enough influence to raise consumer awareness and enact policy change. Gwyneth Paltrow, Kourtney Kardashian, and Jessica Alba, while not only being celebrities, are also consumers. With their public and influential pedestals, they each have the opportunity to voice their opinions and potentially raise awareness and influence other consumers. They, along with other celebrities and others with similar platforms, are in a unique position to have the ability to potentially enact policy change around cosmetics regulation in the United States as consumers. While many times celebrity impact on society may not be favorable for everyone, the policy change for safe cosmetics may be one that is desirable for all consumers.

COSMETICS AND CONSUMERS

Consumers as Policy Decision Makers

The National Association of Community Health Centers (NACHC) currently includes consumers as their policy decision makers for their Health Centers. They include a 51% consumer majority in their board of directors. This practice of consumer inclusion is due to the belief that consumers are the primary stakeholders in the practices taking place at the health centers and, thus, their inclusion in decision making is necessary. These policies are believed to contribute to a more satisfied consumer base (Lohmeier & Saunders, 2016; National Association of Community Health Centers, 2011). Policies related to cosmetics regulation are in place for consumer protection, and consumers are the ones who are subject to the policy regulation outcomes in the form of their cosmetic product use. If consumer opinions become regarded as

more important in policy recommendations, as displayed in the NACHC, similar implementation could occur in cosmetics and, thus, policy change could reflect consumer opinions.

There is concern regarding consumer aptitude in making policy choices for themselves due to beliefs such as consumers lacking the proper knowledge to interpret scientific findings as well as their inability to effectively inform as they may not be well versed in either fields (Layne, 2018). Consumers should not have to be experts in a field to be able to make decisions that affect them (Ferrell & Krugman, 1974; Lohmeier & Saunders, 2016). Consumers could be informed of scientific findings on cosmetic ingredients and be given the opportunity to interpret the scientific findings and proceed accordingly with policy choices. Consumers are capable of making informed decisions regarding policy change just as they vote on other matters within their states and federally (Ferrell & Krugman, 1974).

Consumers in the Marketplace

Consumption has been said by Michiletti (2003) to be political by nature as it is an avenue of change through consumer intervention that would not otherwise be possible through conventional political systems. Consumers have an impact on markets, as they are the ones to whom these markets cater. Consumer expression of concern through their purchases has been described as consumer votes. Purchasing natural cosmetics can be seen as a way of “voting” for natural cosmetics through the choice to purchase the product, no matter the reason (Dickinson & Carsky, 2005; Dickinson & Hollander 1991; Moraes et al., 2011; Shaw, Newholm & Dickinson, 2006) With this voting power, consumers choosing natural cosmetics and gravitating toward them due to their use of safer ingredients, the market may be able to shift to cater to those product idealities.

There are many barriers evident when it comes to consumer votes. Many consumers are aware of their choices as being non-environmentally friendly or useful for their health but often have other reasons for choosing products such as convenience and product favorability (Atkinson & Kim, 2015). This idea may very well be evident in the use of conventional cosmetics as consumers may be aware that their cosmetics are potentially harmful but rely heavily on them for their performance and likability. This idea indicates the possibility that sometimes consumers may not want policy change, as they are satisfied with current policies and like their products as-is. The following survey in this thesis addresses this question in the use or non-use of natural cosmetics.

CONCLUSION TO REVIEW OF THE LITERATURE

When starting the research for this thesis, after a careful reading of the current literature, it became apparent that there was minimal to no consideration of the consumers' desires in changing the policy for safety in cosmetics. Most of the data that policy change suggestions relied on was either from scientists, scholars, cosmetic companies, or politicians. These suggestions for change, while helpful, were not inclusive of the greater mass of society outside of the realms of academia and specialization in policy making or large business. While the input from these included parties is critical to any policy change with cosmetics, the input from the consumers who buy, use, and wear these products could be helpful as well.

Within the literature, there was nothing relating to what consumers definitively expect from their products and from the rules and regulations in place to protect them. There was only speculation on what consumers desire and no data upon which to gauge what exactly consumers want from their cosmetics regulation. The speculation comes from both sides of the spectrum,

those who believe the regulation is enough, and those who do not believe the regulation is enough. This gap in the literature led to the idea that policymakers should be creating policies that address what consumers want by starting with finding what their beliefs and opinions are on the subject. Then it would make sense to formulate a policy suggestion based on the relevant information obtained from consumers.

Common methodological approaches in the available literature included policy analysis, policy comparison, natural cosmetics and conventional cosmetics marketing examination, and scientific toxicology research. While the findings from these methodologies did inform this thesis's methodology, the research has taken a different approach and involved consumers and their opinions on cosmetics regulation. The research aimed to uncover what consumers knew about cosmetics regulation in the United States. Further, the research was used to delve deeper into whether consumers believed that the cosmetics they use are safe and to further analyze whether a change is necessary. This approach differed significantly from current research because the literature primarily focused on the opinions and actions of the professionals and excluded the people who these regulations will be impacting, namely the consumer.

The idea to include consumers in policy decision-making came from some sources such as NACHC (2011) and Moraes et al. (2011). Their belief that consumers be involved in the decision-making process for policies that impact them was one that was inspiring and innovative. Going through the research, it was apparent there was another primary party missing in the opinions regarding what should happen with cosmetics policy in the United States.

Nyilasy et al. (2014) ultimately paved the way for this research to ask consumers of their opinions and to make suggestions based on these consumer opinions. They asked opinions on greenwashing to measure their responses to natural product ads, and then formulate what their

opinions mean for the natural product market. This thesis used the idea by Nyilasy et al. (2014) of asking consumers' opinions, measuring instead consumer opinions on cosmetics policy and what these opinions further suggest.

The use of a survey was inspired by the belief that this would be an effective way to measure opinions and perceptions of consumers. Nyilasy et al. (2014) further inspired the survey because, while their research focused mainly on consumer opinion, the way they went about finding the opinions was not applicable to this research. After reviewing many research methods in the literature, it became apparent that a sample survey using a snowball sample methodology would be best, as it is a very general approach to finding non-specialized, initial opinions which is what this thesis sought (Crossman, 2018).

Sources such as Daum (2006) and Watnick (2014) were helpful for this thesis; their methodologies relied primarily on cosmetics policy analysis in the United States and other countries. The findings and positions proposed by these papers led this thesis research to ask survey questions comparing policies in the United States to those of other countries. These sources advocate for policies similar to those in other countries but do not adequately consider if consumers are happy with current policies.

Another resource for the methodology of this thesis was from the advocacy group, Campaign for Safe Cosmetics. Much of their arguments against the current US FDA regulatory practices as well as cosmetic manufacturing companies and their ingredients of concern currently present in cosmetics such as parabens, phthalates, mineral oil, and lead, led this researcher to seek out scientific findings and formal analysis of these findings and their rebuttals. These concerns and rebuttals come from sources such as Cashman and Warshaw (2005); Darbre et al. (2004); Darbre and Harvey (2014); El Hussein et al. (2007); the US FDA; Godrey (2008); Jagne

et al. (2016); the Official Journal of European Union (2014); and Smith and Lourie (2014), for their varying positions on parabens and phthalates in cosmetics.

Sources for their findings and positions on mineral oil and lead in cosmetics came from Berkeley Wellness (2017); Brown (2013) ; Concin et al. (2011); the US FDA; Fioravanti (2010); Hatch et al. (2008); James-Todd (2012); Latini (2005); Newbold (2010); Stahlhunt et al. (2007); Miljøstyrelsen (2017); Needleman and Schell (1990); Niederer et al. (2016); Tsz (2010); Wang et al. (2016); Wijngaarden et al. (2007); and Witorsch and Thomas (2010). This research for the literature review further translated into this thesis's survey questions asking consumers if they believe potentially toxic ingredients are in cosmetics and asking their opinions on concerns against these ingredients to establish whether or not consumers feel safe with their current cosmetic policies.

Multiple sources were used in asking survey questions relating to potential barriers to buying natural cosmetics. The Tarte, Physicians Formula, and KKW cosmetics scandals relating to their lack of diversity in their products led to the idea that this may be a common issue preventing consumers, particularly those of darker skin tones, from being able to buy natural cosmetics. This idea of exclusion was also influenced by Hope (2016), whose work assisted in the research by providing information that there is a common exclusion in cosmetics in general. There are also issues with affordability and efficacy that were informed by Cronin (2011); Ottman 2006; Ottman & Miller (1999); and Royne et al. (2012). This information further led to inquiring with consumers on if they use natural cosmetics and their reasons for their use or non-use.

For the scope of research, the final decision was that this thesis would conclude by identifying any necessary policy change suggestions for the United States cosmetics regulation.

This decision stemmed from the concern that there is not enough regulation of cosmetics in the United States—a concern expressed by many other sources such as Campaign for Safe Cosmetics (2018); Dauma (2006); Mason (2008); and Watnick (2014). With consumers being the primary stakeholders within the cosmetics market in the United States, the outcome of this thesis would follow that it is crucial that the policy suggestions made be by the consumer, for the consumer.

CHAPTER 3 – METHODOLOGY AND RESULTS

INTRODUCTION TO METHODOLOGY AND RESULTS

This chapter establishes the methodology used for the thesis research in order to answer the research question about whether or not consumer opinions and perceptions match current cosmetics policy in the United States that is in place to protect them. A survey was conducted to answer the research question. The chapter continues and analyzes the results of the survey questions using descriptive statistics.

METHODOLOGY

Identification of Methods

For conducting the research to answer the research question on whether or not current cosmetics policy matches the opinions and perceptions of consumers they are in place to protect, this thesis used a quantitative survey on the online site Survey Monkey.

The use of a quantitative survey was done to quantifiably measure the responses based on the knowledge or opinions of each participant. The basis of the various question types in the survey relied heavily on several different methodologies of natural cosmetics marketing, policy analysis and comparison, as well as toxicology research. These questions measured generalized consumer opinions on various products.

The questions were primarily formulated to address many concerns brought up in the current literature such as the allowed use of potentially toxic ingredients in cosmetics, the voluntary status of FDA registration for cosmetic products and cosmetic companies, as well as the pre and post-market safety checks of cosmetics. Additionally, the questions posed sought to

identify the consumers' knowledge of current policy, and whether there was a consensus that specific policies addressed in these questions are insufficient.

Some of the questions posed related more specifically to the use of natural cosmetics. These questions were added to the survey to assess opinions on natural cosmetics as they are intended to be the safe alternative to conventional cosmetics. These questions were posed to identify if any barriers may be present, preventing consumers from using natural cosmetics. The results of this section were intended to provide information for natural cosmetic companies to effectively market their products to the general public.

Identification of Target Population

When identifying the responses, it made the most sense to have feedback from the general United States adult population of consumers who are ages 18+. Cosmetics are prevalent in everyday life for a significant portion of the population. The author wanted to gauge the interest of any and all cosmetic consumers. While it was critical to the research to ensure that each of the participants answered honestly, it was equally as critical that the participants were comfortable enough to express their knowledge or gaps in knowledge with regards to the cosmetic industry. To give cosmetics consumers a voice, each of these questions was written with consideration so as not to tip the participant in any one direction. It was also important to give enough information that the participant would continue and finish the survey with a sense of purpose in completing it. Each of the questions built upon the last and added more depth to the understanding of the general opinion on cosmetics regulation in the United States. In general, the author intended to reach as many consumers as possible that are impacted by the current policy.

The use of social media was done in order to receive general public feedback of their opinions on these matters. Facebook is a common social media platform that has millions of

users. Because of the availability of feedback from posting on Facebook, the author of this thesis research introduced and conducted the survey by sharing it on their personal page. At the time the survey was shared, the author's Facebook account had over 1,600 friends, most of which could participate in or share the survey.

Facebook was the chosen space because the survey's primary goal was to get feedback from a lot of consumers. This was done using a snowball sample methodology to receive feedback from as many people as possible because it was exploratory initial research that was not aiming to hear from any specific group aside from US citizens. Facebook was also desirable due to the sharing option, meaning people could share the survey with their friends and family and the survey could get even more responses from people that may not have otherwise gotten to respond if the survey had been conducted through other means of receiving feedback such as surveying consumers at cosmetics stores or kiosks. In other words, the survey was not limited to only the people that were in direct contact with the author and had the potential of expanding beyond the author's reach in a short amount of time.

Conducting the Survey

The survey was conducted on the Survey Monkey website after having paid for the additional subscription to expand the ten-question limitation and provide a better analysis tool. The survey was advertised via the author's personal Facebook page using the following introduction on a public and sharable post.

“Hello everyone, I am conducting a survey for my thesis I am working on in the Master of Environmental Studies Program at The Evergreen State College. This survey is open to anyone who is 18+ and is a US citizen, currently lives in the US, or a US citizen abroad. The topic of this survey is around cosmetics in the United States. If you are in the MES

program with me I am going to ask that you abstain from participating in the survey but please feel free to share with your friends, family, or colleagues. This survey is open to all the groups listed and everyone is welcomed and encouraged to share. The survey is 21 questions long and based on your current knowledge. This is not a test so please do not look up answers for the survey as I am trying to gauge what you know now. Feel free to do your own research on the topic after the survey. If you have any questions please feel free to message me on here. Thanks!”

The survey was open to the public for fifteen days after the initial post. The preliminary goal of the survey was to have at least 60 responses before analyzing the results. However, the survey received over 340 complete responses during that time. The goal to get 60 participants was in place to ensure a wide range of responses to avoid potential bias and risk not having a large enough sample size to measure trends accurately. Surpassing the original goal of 60 participants and receiving 340 complete responses was a huge success as this made for a much larger sample size to not only increase the quality of the feedback but to make it easier to identify any trends.

After sharing the survey online, over 30 different people shared the original post, and this had a direct effect on the number of participants. This impact was apparent, as often throughout the time the survey was available, the participants would comment something along the lines of, “Done” on the original post or the shared post. Many of the commenters were not on the original 1,600 friends list. The shares were effective at engaging participants and thus increasing the overall amount of completed responses.

Identifying Survey Questions

When identifying the questions to ask consumers, the questions were based on what was commonly brought up as suggestions for change in the current literature. Most of the literature based these suggestions on other policies in other first-world countries such as the European Union countries and Canada. A majority of the literature looked closely at toxicology research within the cosmetics field, suspected toxic ingredients, and safe amounts of use for these toxic chemicals. What was particularly interesting about these toxicology sections was that the safe amount of use was based on what scientists deemed to be safe and at minimal risk to consumers. One of the main ideas that was essential to the research was establishing whether consumers felt safe with any or small amounts of toxic chemicals in their cosmetics. This was critical to see if there is a perception of safety when the government is assumed to be involved in regulation of cosmetics. This thesis was looking to see if consumers believe in the perceived safety or if there was even awareness that the products were not strictly regulated.

SURVEY QUESTIONS

The Appendix of this thesis shares the questions that were posted online after being approved by the Human Subject Review panel at the Evergreen State College. The questions posed did not ultimately reveal the identities of the survey takers in the thesis, the survey was completely voluntary, and found to be of minimal risk to any person participating. Below, the questions are organized by category.

Questions Identifying Demographics:

The questions identifying demographics were asked to see the various ethnicities, ages, genders, or education levels of survey takers.

Questions identifying demographics included:

Question 2: *What is your age?*

Question 3: *What is your education level?*

Question 4: *What is your gender?*

Question 5: *What is your ethnicity?*

Questions Identifying Use of Cosmetics:

Next, there was a group of questions to identify the people who use cosmetics versus the people who do not use cosmetics. It was essential to identify any differences in opinions of people as a baseline of the non-users and the target audience of cosmetic users rather than just lawmakers and scientists.

Questions to identify the users and non-users included:

Question 6: *Do you buy and use cosmetics? (Make up, facial lotions, lotions, face wash, nail polish, etc.)*

Question 7: *How often do you wear cosmetics?*

Questions Identifying Current Knowledge:

These questions were asked to examine where the average person is in their knowledge of cosmetics regulation in the United States as well as measuring whether or not consumers use conventional cosmetics products despite being aware of the risks associated with them. These questions additionally sought to understand if consumers are aware of their cosmetics policies and regulations. These questions were intended to identify the intentions of consumers as well as the knowledge gaps and, further, current knowledge of consumers.

Questions used to identify the knowledge of the consumers included:

Question 8: *Who do you think is in charge of regulating the cosmetics industry in the United States? (Upholds laws and regulations applying to cosmetics on the market in the US)*

Question 9: *Do you think there are potentially toxic chemicals in cosmetics in the United States?*

Question 11: *Are cosmetics required to be tested for safety before being sold in the United States and, if not should they be?*

Questions Identifying Opinions of Current Cosmetics Policies:

These questions were posed to inform the policy recommendations this thesis proposes. These questions were based on suggestions posed by scholarly articles that base their suggestions on regulations from their own opinions or other countries. The reason these are in the questionnaire is they seek to identify whether or not the general public agrees with these suggestions rather than scholars making the calls for the general cosmetics consumers.

Questions identifying the opinions of current policies included:

Question 10: *Do you think a cosmetics product recall should be mandatory if a product is suspected of being unsafe for use?*

Question 12: *Do you think that if an ingredient is banned in another country for being potentially unsafe, it should also be banned in the US?*

Questions Identifying Practices Regarding Natural Cosmetics:

The reason for asking questions about natural cosmetic use was to see if the alternative to conventional cosmetics – natural cosmetics – are being utilized and why or why not. These were additionally posed to analyze opinions regarding natural cosmetics as many people may have differing opinions regarding the effectiveness of natural products in general. Often, people feel natural products do not perform as well as their conventional counterparts so making a comparison was a helpful insight to see the differences, identify any potential barriers preventing consumers from wanting to or being able to use natural cosmetics as that is their alternative option to policy change.

Questions to identify practices regarding natural cosmetics included:

Question 13: *Do you go out of your way to buy natural cosmetics?*

Question 14: *Do you feel represented by natural cosmetics? (Foundation skin color shade range)*

Question 15: *Do you find natural products to be more or less affordable than normal products?*

Question 16: *Do you feel natural cosmetic products perform as well as their top brand counterparts?*

Questions Identifying Opinions on Suggested Policy Changes:

These questions were designed to gather consumer opinions about how the cosmetics industry should be regulated. These suggestions were important to measure to ensure that these policy suggestions are actually worthwhile not only for the groups involved but for consumers as well. It is important to understand whether or not consumers want these changes in their policies or if they are pursued without the interest of consumers.

Questions regarding these opinions included:

Question 17: *Do you think extensive, long term testing should be done on cosmetic ingredients before they are allowed to be used in cosmetics?*

Question 18: *Do you think cosmetics companies should have to register with their governing agency before selling their products?*

Question 19: *Do you think ingredients in cosmetics that are currently on the market should be tested annually to see if there are different findings about the safety?*

Question 20: *Do you believe potentially harmful ingredients should be allowed in cosmetics if the amount of these ingredients is low enough to be safe, according to safety tests?*

Question 21: *Do you think there should be testing for the health effects of combining multiple, common cosmetic products at the same time? (For example: foundation, concealer, mascara, lipstick)*

DATA ANALYSIS

When analyzing the results of this survey, basic descriptive statistics was used to analyze the different answers to the various questions. The questions regarding opinion were initially looked at by complete responses of all respondents and while demographic identification was asked, the responses were not explicitly categorized into demographics due to the snowball sampling method of the survey. The analysis of these survey responses focused on determining whether or not the vast majority of responders chose a particular answer choice. When 50% or more chose any given answer choice, that choice was considered to be what most of the responders wanted, and the policy suggestions were then formulated to reflect this.

LIMITATIONS IN THIS STUDY

Breadth of Research

While this survey was available to many people by being introduced and utilized on the internet, it is essential to acknowledge that the internet is something not every person uses or has access to. Also, people who have a connection to the author in some way or another were the primary survey takers. This survey reached many people but was still very limited in that it only reached people through Facebook and not in every walk of life in the United States that may have been able to contribute to it.

Potential for Bias

Within conducting this research, it was important to recognize potential bias in the answers. The author felt that because her Facebook friends list was so extensive that she would receive a lot of feedback which was the primary goal of the survey. The author additionally was not Facebook friends with many people from class and, further, she asked her classmates to

abstain from taking the survey, she was helping reduce the risk of bias. The author has had her Facebook account for more than ten years, so many people she has met in various parts of her life who she has connected with through Facebook had access to answer these questions. She has people on her Facebook ranging from the various ages, regional location, ethnicities, education, and gender, so this thesis presumed that the diversity of her friend's group would help reduce the potential for bias. Due to the feedback of this survey being primarily from Caucasian and Native American women, those appear to be the groups that the Facebook survey struck a chord with and may further indicate those groups are the ones who are most engaged on the author's Facebook page and portray that the results reflect feedback mainly from those groups, however this is unnecessary as any and all feedback was helpful. Moreover, there may be an influx of those groups of people on the author's page, however this is not possible to examine as there is no methods the author could access in which Facebook categorizes friends lists into demographic groups and there are no ethnic identification settings users choose on the platform.

In identifying the author's own bias, she does feel that there should be a policy change and that the United States needs to change the way cosmetics are produced to be more sustainable, and with minimal risk to consumers and furthermore the environment. She feels that she is not overly political and generally abstains from sharing too much of her personal beliefs around the topics in the survey on Facebook. Although she does often share her beliefs on caring for the environment and some stances on politics, the questions were carefully crafted so as not to show bias, and the questions were posed merely to gauge every sort of responses and opinions that would be relevant in suggesting new policy for everyone.

The author made it clear in the introduction to the survey that the survey was not a test, and it was based on current knowledge and that she asked the survey takers to refrain from

researching the subject until after they completed the survey so as not to skew the results. This additional step was taken to address the potential for bias and to ask for the survey takers help in preventing this.

Self-selection bias is a risk in this situation as this is shared on Facebook and the survey takers do elect to take the survey, which may cause the results to sway one way or another. This survey was introduced to the author's entire friends list and many other of the author's friends' friend's lists. Many people were able to see the survey and chose not to participate as evident by 340 complete responses when shared with over 1,600 people; not everyone responded, yet, many elected to participate. While these survey results risk this self-selection bias, the author believed the research would reach a large audience and all feedback would be helpful for the exploratory research.

RESULTS

The online survey was open on Survey Monkey for 14 days from February 7th, 2018 until February 14th, 2018, and received 381 total responses. Of the 381 responses, 340 responses were complete. In order to be considered complete, each and every question must have been answered. The skipping of any question in the survey disqualified that survey for analysis. The survey exceeded all the initial expectations by receiving so many responses. The survey clearly sparked interest in people as it was introduced to 1,600 friends and received 340 engaged responses.

Questions Identifying Demographics Results

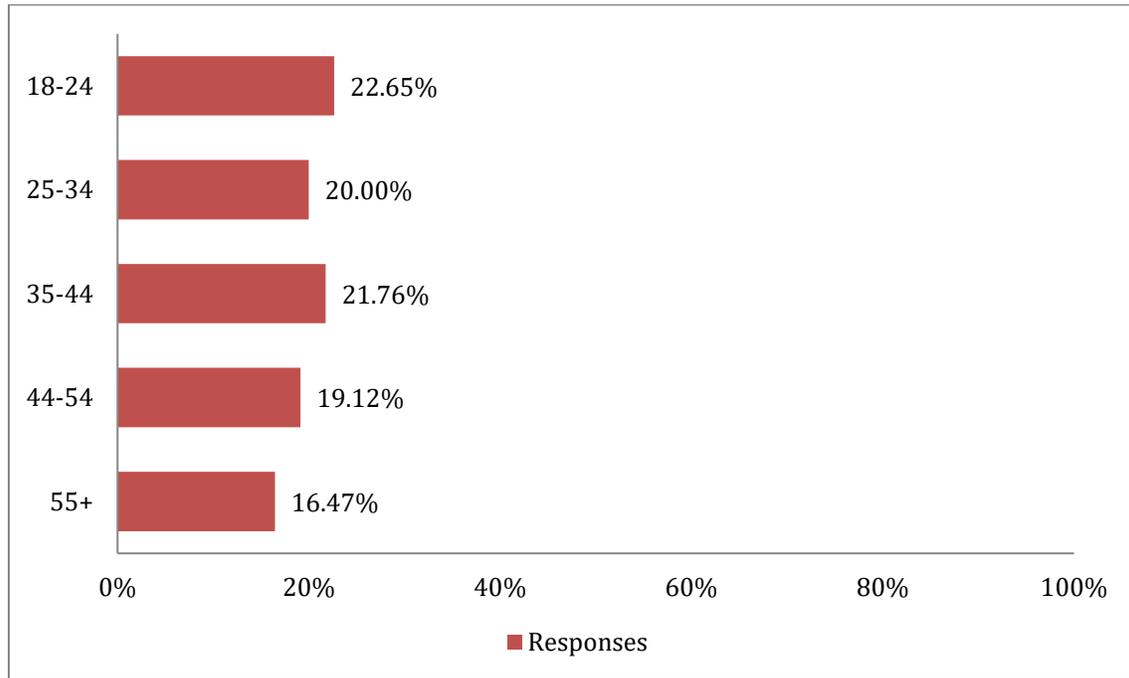


Figure 1.1
Question 2: What is your age?

Question 2: “*What is your age?*” had seventy-seven participants between the ages of 18-24. Sixty-eight participants were between the ages of 25-34. Seventy-four participants were between the ages of 35-44. Sixty-five participants were 45-54 years old. Fifty-six participants were 55 and over. The first three age brackets were fairly evenly distributed in ages of survey takers and had a slight dip in the bracket between the 18-24 and the 35-44 bracket.

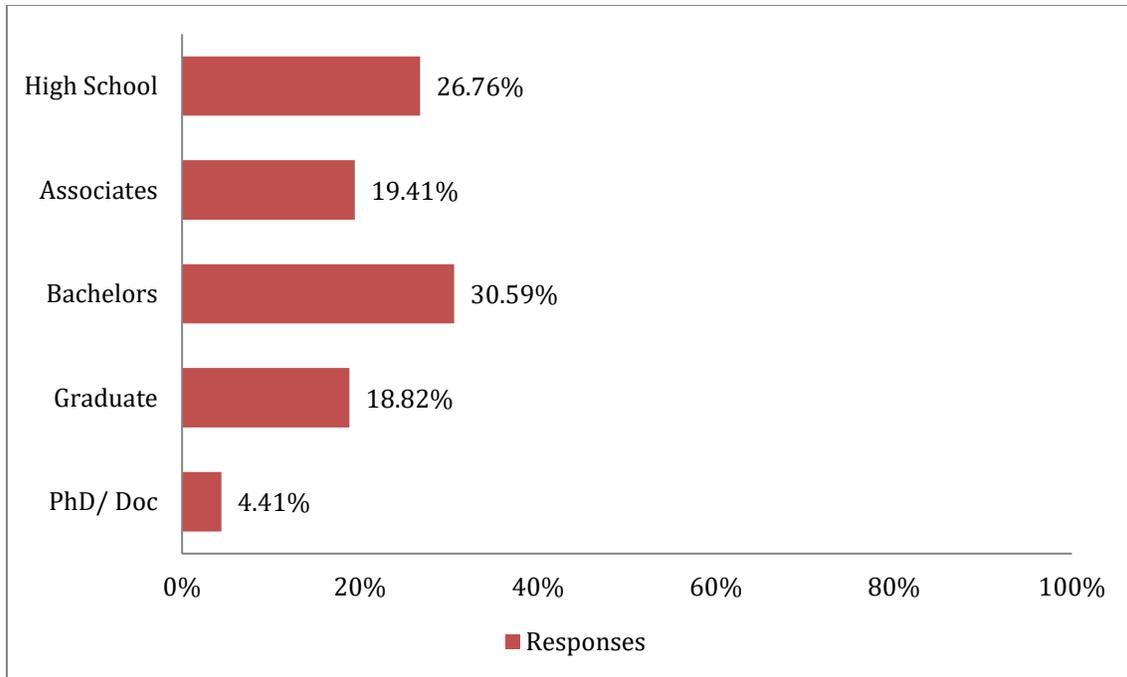


Figure 1.2
Question 3: What is your education level?

Question 3: “*What is your education level?*” had ninety-one participants with High School/ GED education. Sixty-six participants reportedly had Associates Degree’s. One hundred and four participants had bachelor’s Degrees. Sixty-four participants had Graduate Degrees. The remaining fifteen participants reportedly had PhD/ Doctorate Degrees.

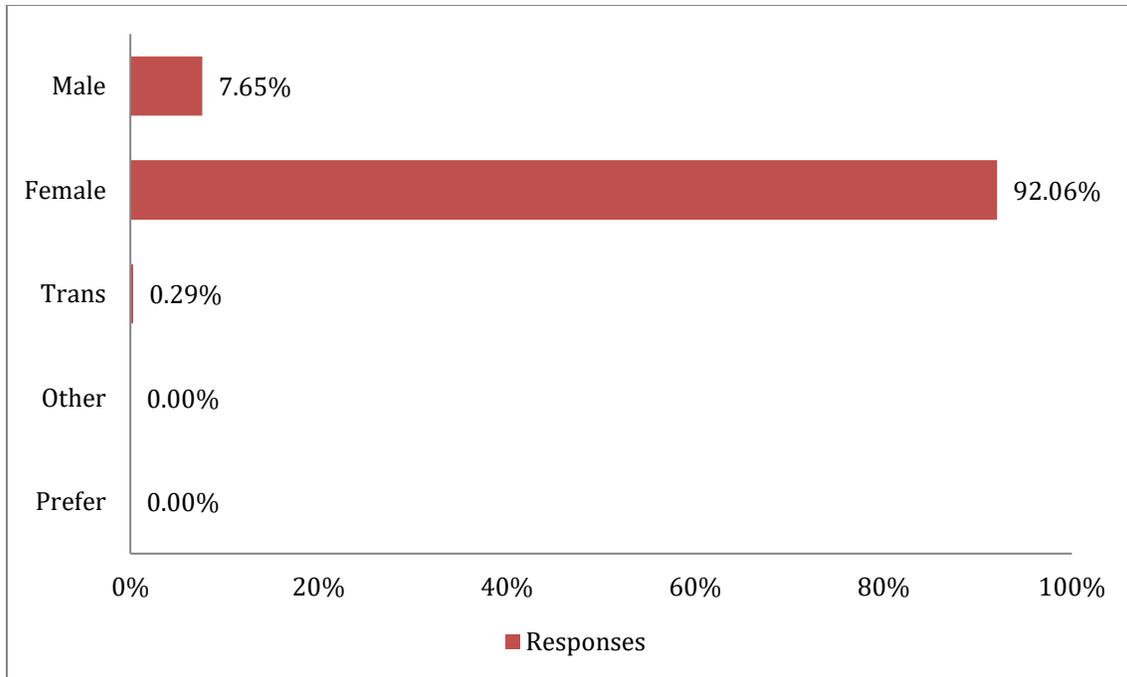


Figure 1.3
Question 4: What is your gender?

Question 4: “*What is your gender?*” had twenty-six male participants. There were three hundred and thirteen female participants. There was one transgender participant. The remaining choices: “Other”, and “Prefer Not to Answer” had no participants.

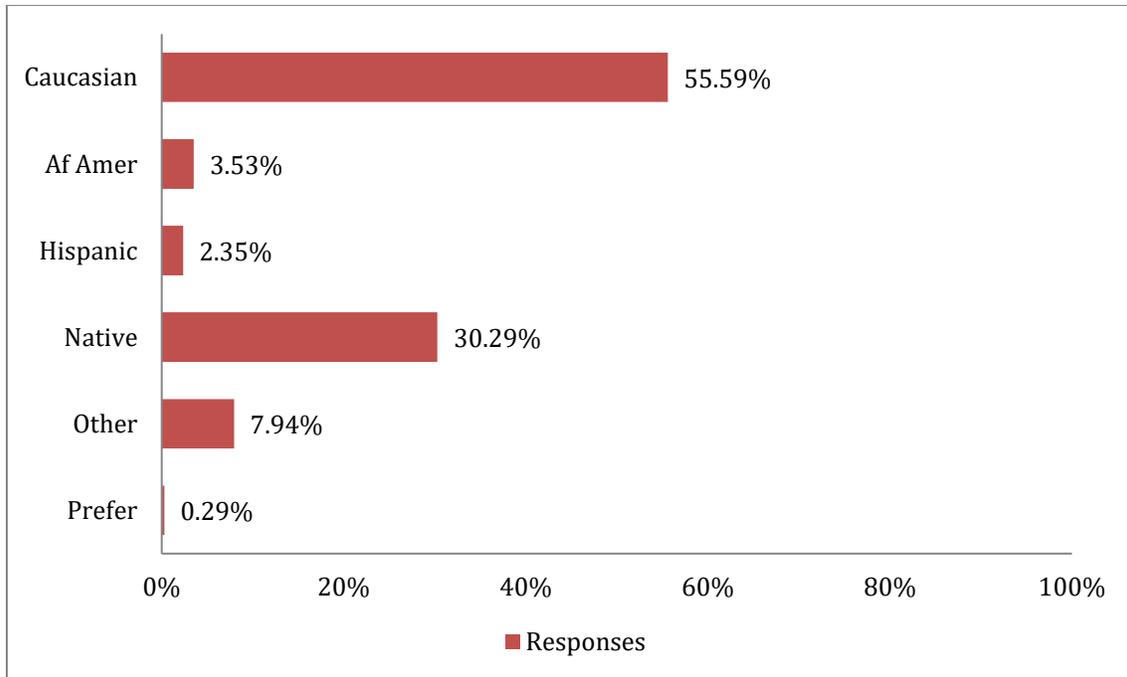


Figure 1.4
Question 5: What is your ethnicity?

Question 5: “*What is your ethnicity?*” One hundred and eighty-nine participants identified with answer choice: “Caucasian.” Twelve participants identified with answer choice: “African American.” Eight participants identified with answer choice: “Hispanic.” There were one hundred and three Native American/ Alaska Native responders. There were twenty-seven participants who chose answer choice: “Other.” The remaining answer choice: “Prefer Not to Answer” had one participant.

Questions Identifying Use of Cosmetics

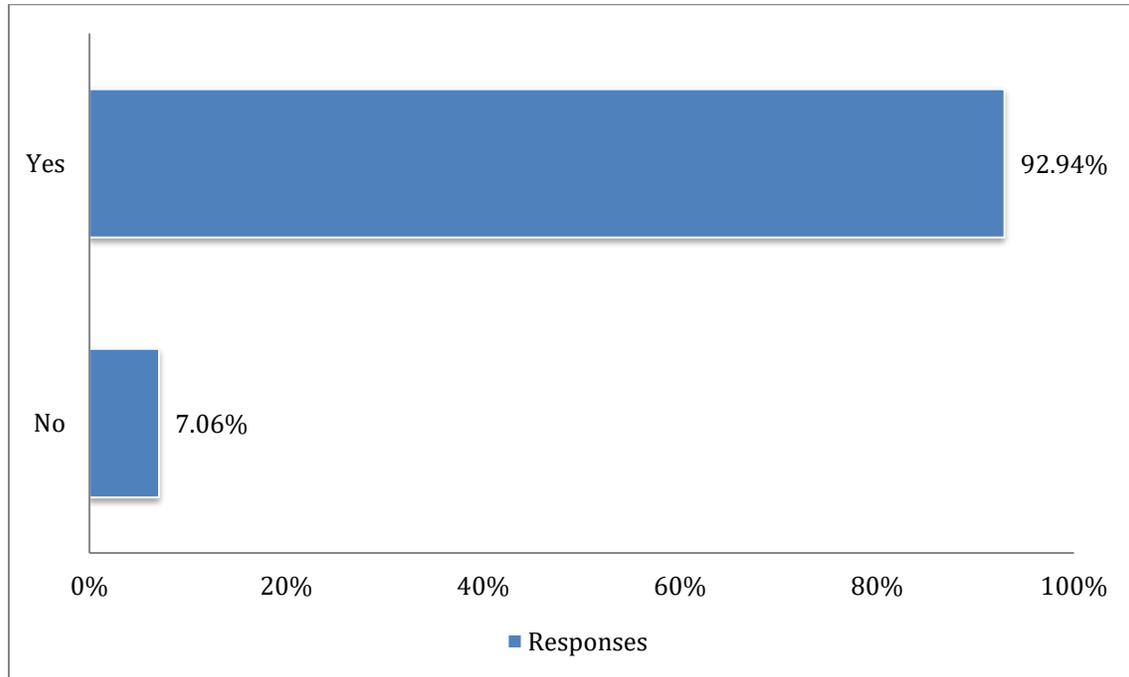


Figure 2.1

Question 6: Do you buy and use cosmetics?

Question 6: “Do you buy and use cosmetics? (Make up, facial lotions, face wash, nail polish, etc.)”. Three hundred and sixteen participants reportedly buy and use cosmetics, only twenty-four participants responded that they do not use cosmetics.

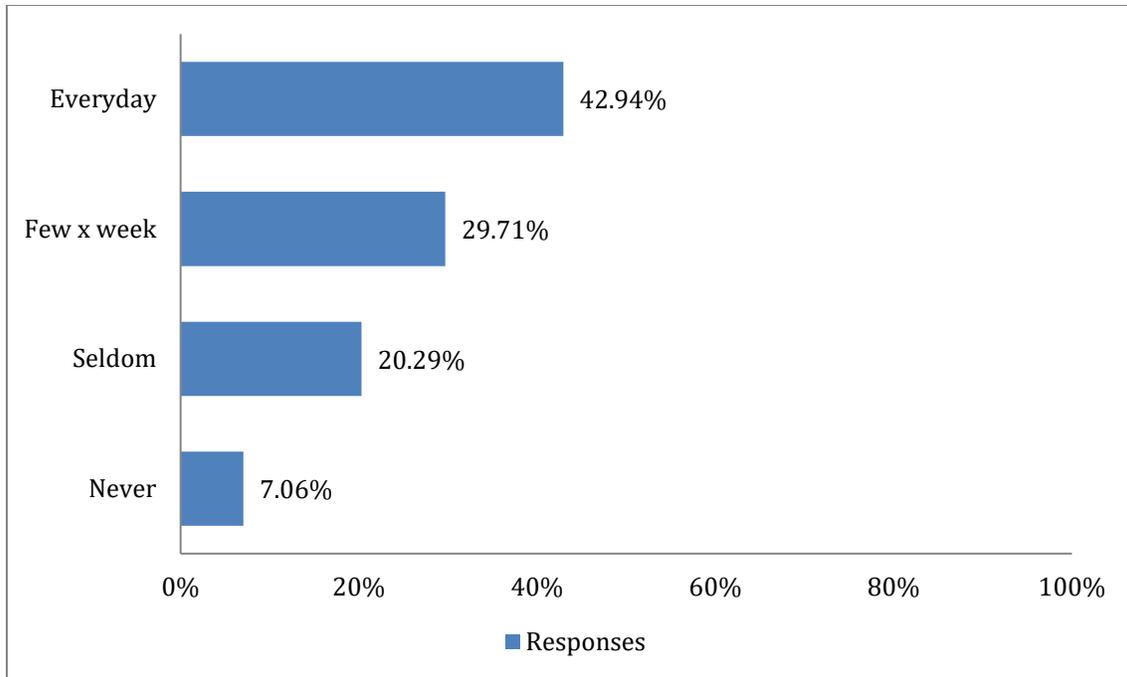


Figure 2.2

Question 7: How often do you wear cosmetics?

Question 7: *“How often do you wear cosmetics?”* One hundred and forty-six participants, responded that they use cosmetics “every day.” One hundred and one participants chose answer choice: “A few times a week.” Sixty-nine participants chose answer choice: “Seldom.” Twenty-four participants reported back with answer choice: “Never.”

Questions Identifying Current Knowledge

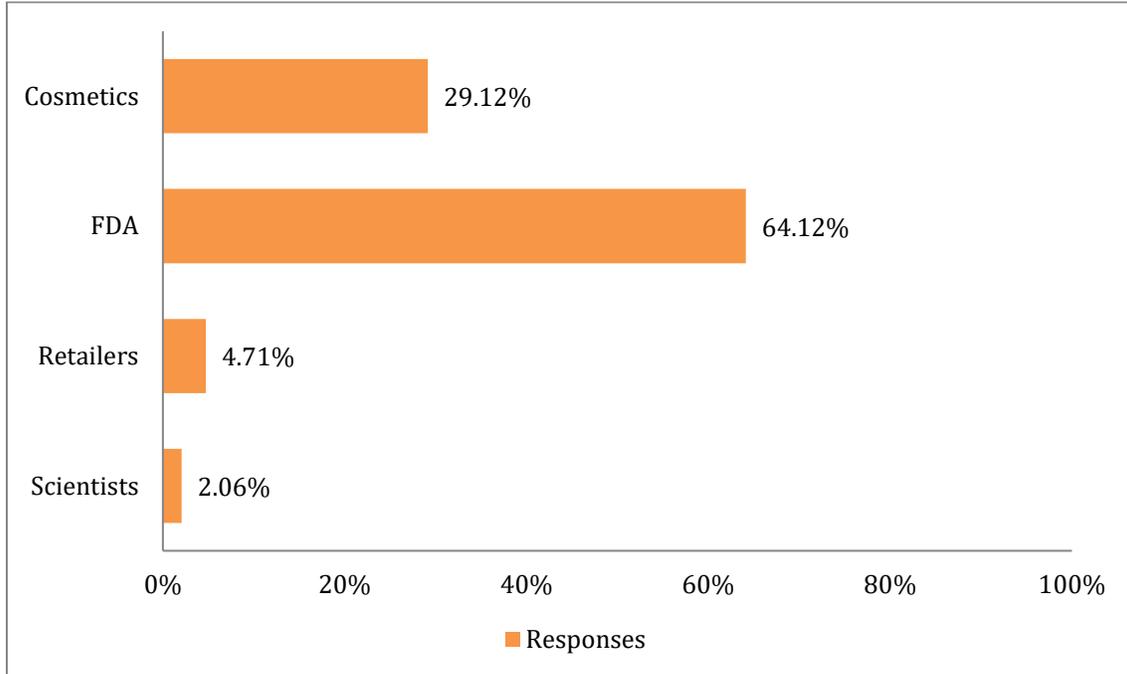


Figure 3.1

Question 8: Who do you think is in charge of regulating the cosmetics industry in the United States?

Question 8: *“Who do you think is in charge of regulating the cosmetics industry in the United States? (Upholds laws and regulations applying to cosmetics on the market in the US)”*

Two hundred and eighteen participants responded with answer choice: “The Food and Drug Administration.” Ninety-nine participants responded with answer choice: “Cosmetics Companies.” Sixteen participants responded with answer choice: “Retailers.” Seven participants chose answer choice: “Scientists.”

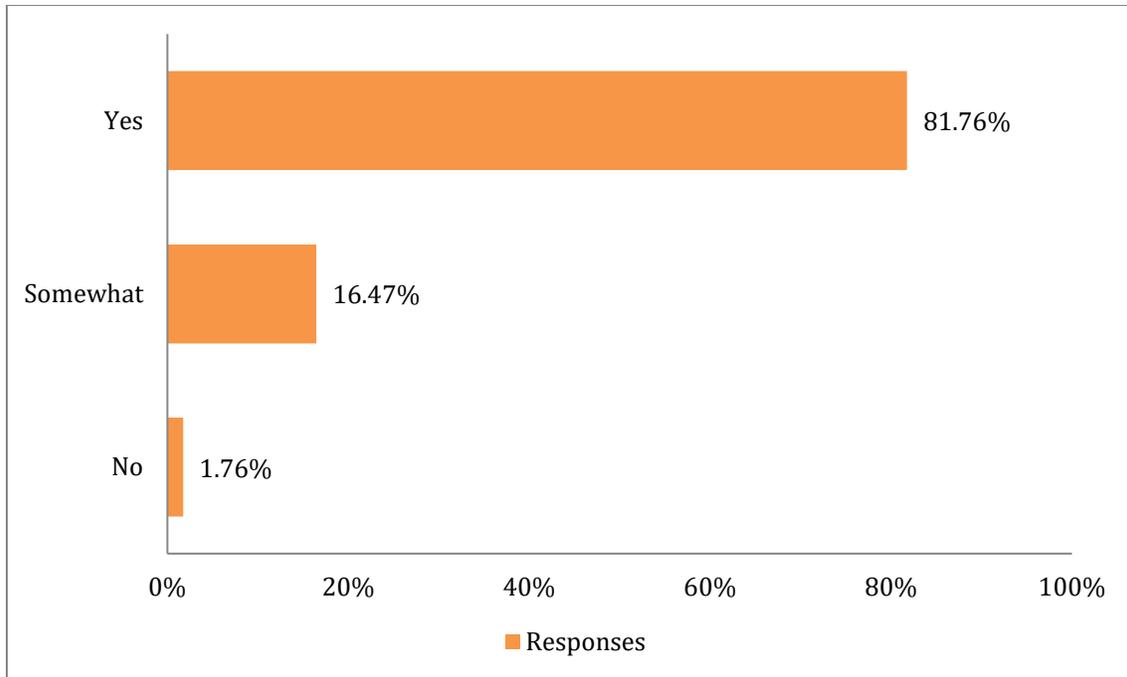


Figure 3.2

Question 9: Do you think there are potentially toxic ingredients in cosmetics in the United States?

Question 9: *“Do you think there are potentially toxic chemicals in cosmetics in the United States?”* Two hundred and seventy-eight participants responded with answer choice: “Yes.” Fifty-six participants responded with answer choice: “Somewhat.” The remaining six participants responded with answer choice: “No.”

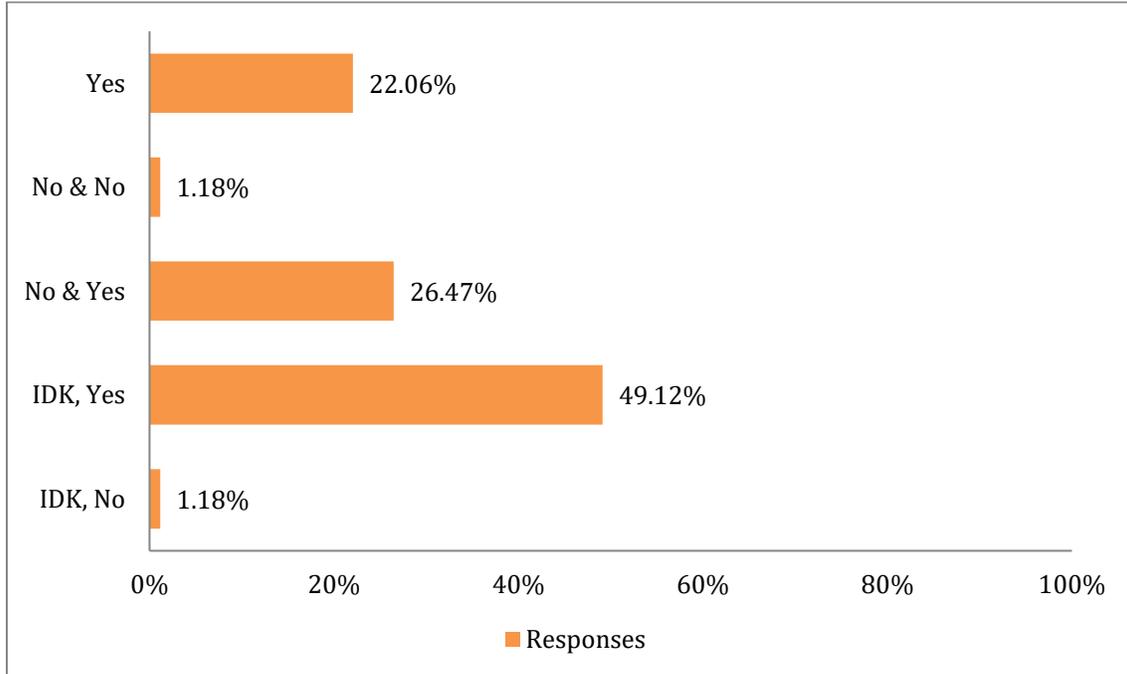


Figure 3.3

Question 11: Are cosmetics required to be safety tested before being sold in the United States and, if not should they be?

Question 11: *“Are cosmetics required to be tested for safety before being sold in the United States and, if not should they be?”* Seventy five participants chose answer choice: “Yes, testing is required.” Four participants chose answer choice: “No, testing is not required, and I believe that is OK.” Ninety participants responded with answer choice: “No, testing is not required but it should be.” One hundred and sixty-seven participants responded with answer choice: “I don’t know if testing is required, but I think it should be.” Four participants responded with answer choice: “I don’t know if testing is required, but I think it is unnecessary.”

Questions Regarding Opinions on Current Cosmetics Policies Results

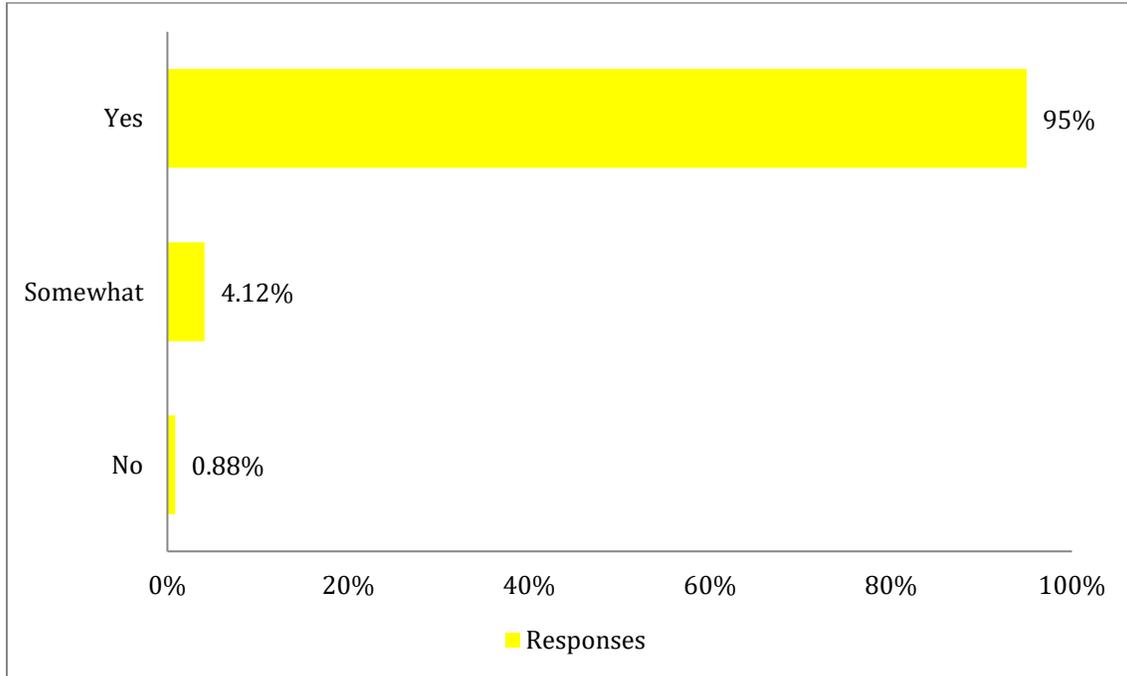


Figure 4.1

Question 10: Do you think a cosmetics product recall should be mandatory if a product is suspected of being unsafe for use?

Question 10: *“Do you think a cosmetics product recall should be mandatory if a product is suspected of being unsafe for use?”* had three hundred and twenty-three participants choosing answer choice: “Yes.” Fourteen participants chose answer choice: “Somewhat.” The remaining three participants chose answer choice: “No.”

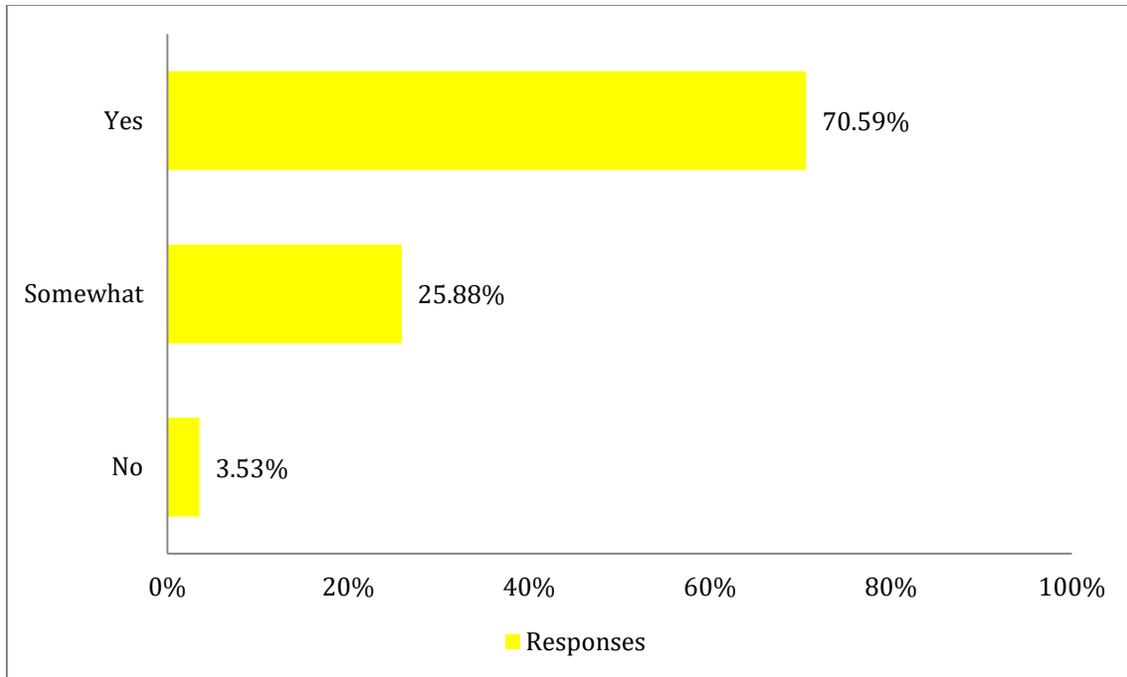


Figure 4.2

Question 12: Do you think that if an ingredient is banned in another country for being potentially unsafe, it should also be banned in the US?

Question 12: *“Do you think that if an ingredient is banned in another country for being potentially unsafe, it should also be banned in the US?”* had two hundred and forty participants choosing answer choice: “Yes.” Eighty-eight participants chose answer choice: “Somewhat.” The remaining twelve participants chose answer choice: “No.”

Questions Identifying Practices Regarding Natural Cosmetics Results

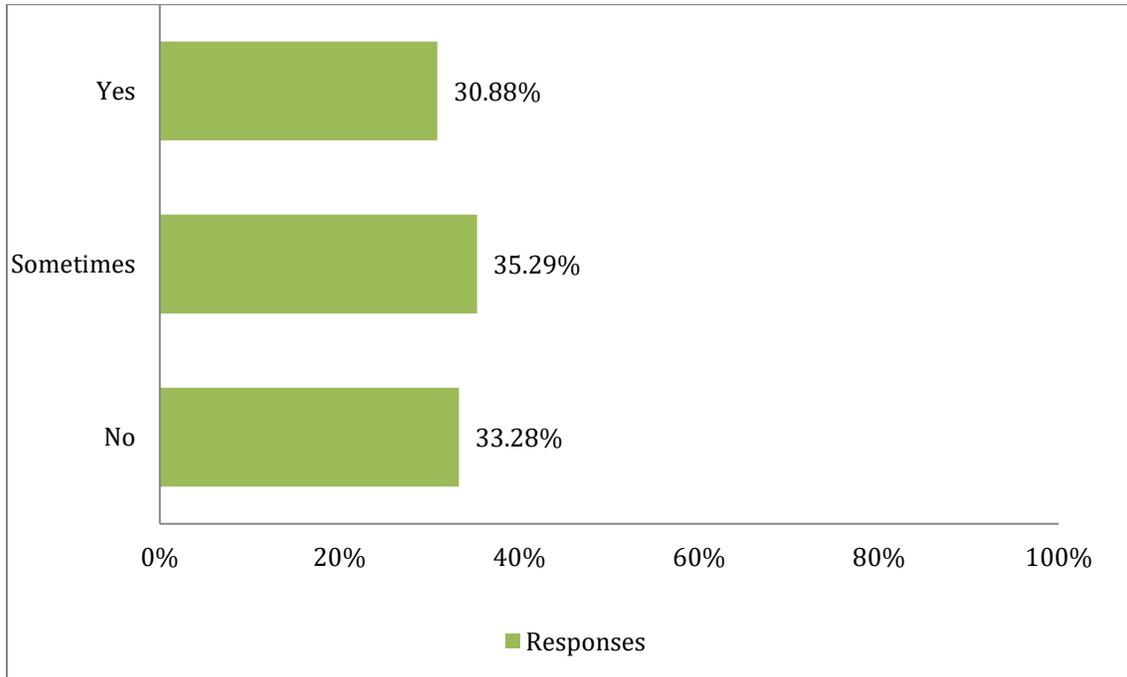


Figure 5.1

Question 13: Do you go out of your way to buy natural cosmetics?

Question 13: *“Do you go out of your way to buy natural cosmetics?”* One hundred and five participants reported back with answer choice: “Yes.” One hundred and twenty participants reported back with answer choice: “Sometimes.” The remaining one hundred and fifteen participants reported back with answer choice: “No.”

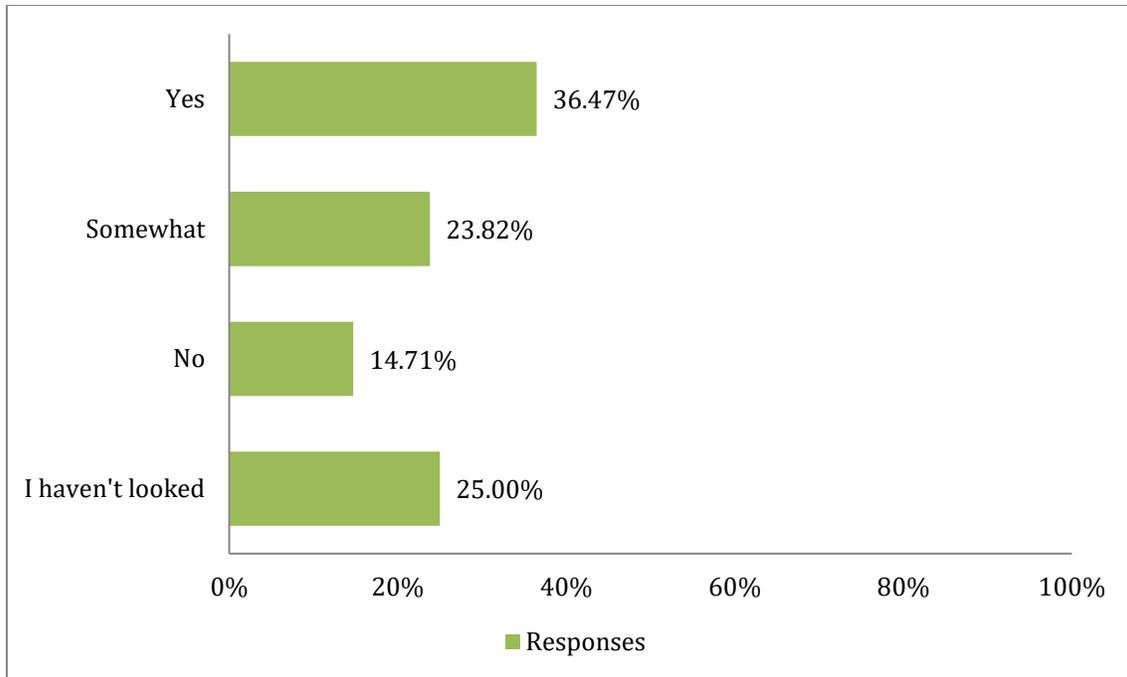


Figure 5.2

Question 14: Do you feel represented by natural cosmetics?

Question 14: *“Do you feel represented by natural cosmetics? (Foundation skin color shade range)”* One hundred and twenty-four participants chose answer choice: “Yes.” Answer choice: “Somewhat”, was chosen by eighty-one participants. Answer choice: “No,” was chosen by fifty participants. Answer choice: “I haven’t looked,” was chosen by eighty-five participants.

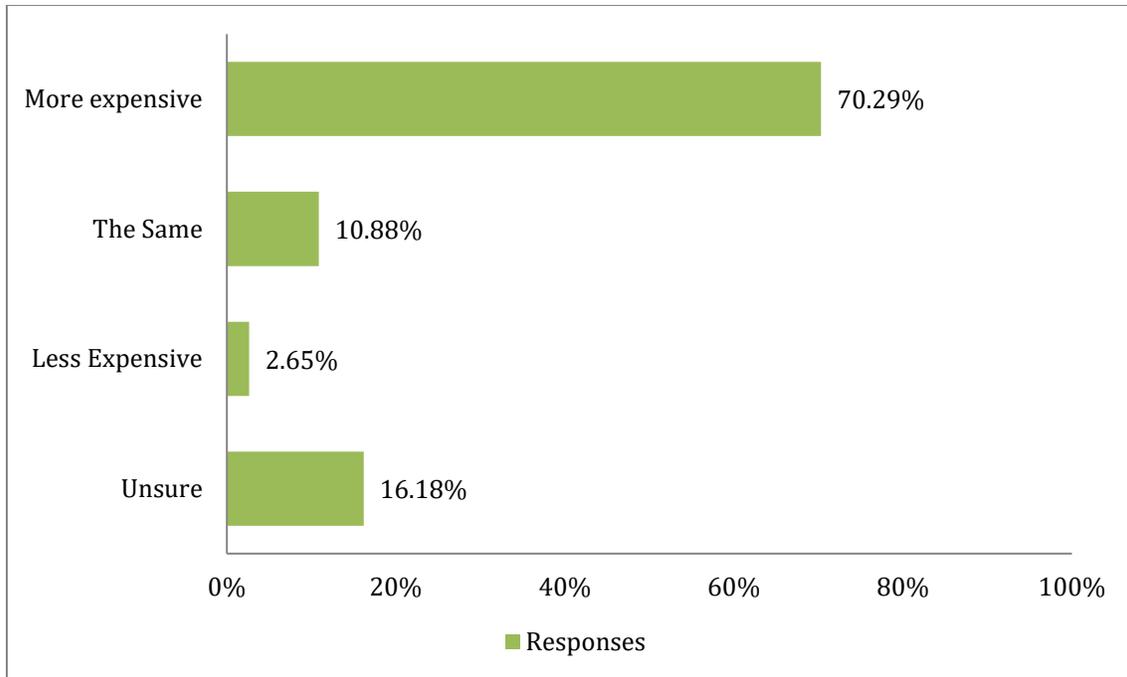


Figure 5.3

Question 15: Do you find natural products to be more or less affordable than normal products?

Question 15: *“Do you find natural products to be more or less affordable than normal products?”* was posed. For that question, two hundred and thirty-nine participants chose answer choice: “More expensive.” Thirty-seven participants chose answer choice: “The same.” Nine participants chose answer choice: “Less expensive.” The remaining fifty-five participants chose answer choice: “Unsure.”

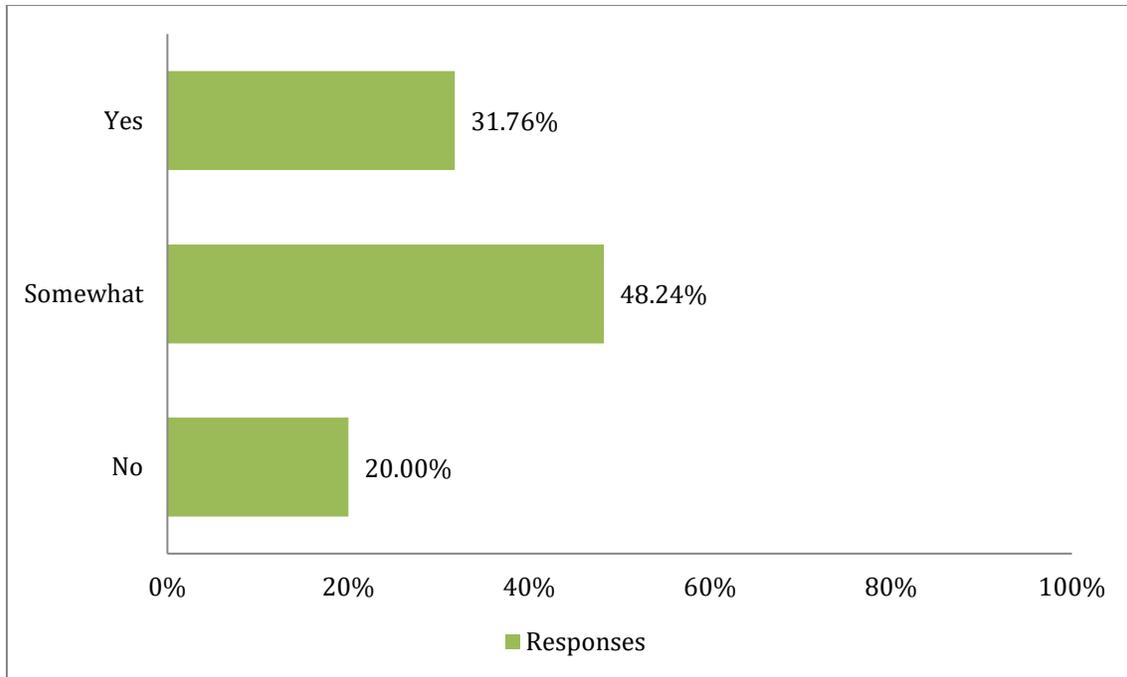


Figure 5.4

Question 16: Do you feel natural cosmetic products perform as well as their top brand counterparts?

Question 16: *“Do you feel natural cosmetic products perform as well as their top brand counterparts?”* was also asked. One hundred and eight participants chose answer choice: “Yes.” One hundred and sixty-four participants chose the next answer choice: “Somewhat.” The remaining sixty-eight participants chose final answer choice: “No.”

Questions Identifying Opinions on Suggested Policy Changes Results

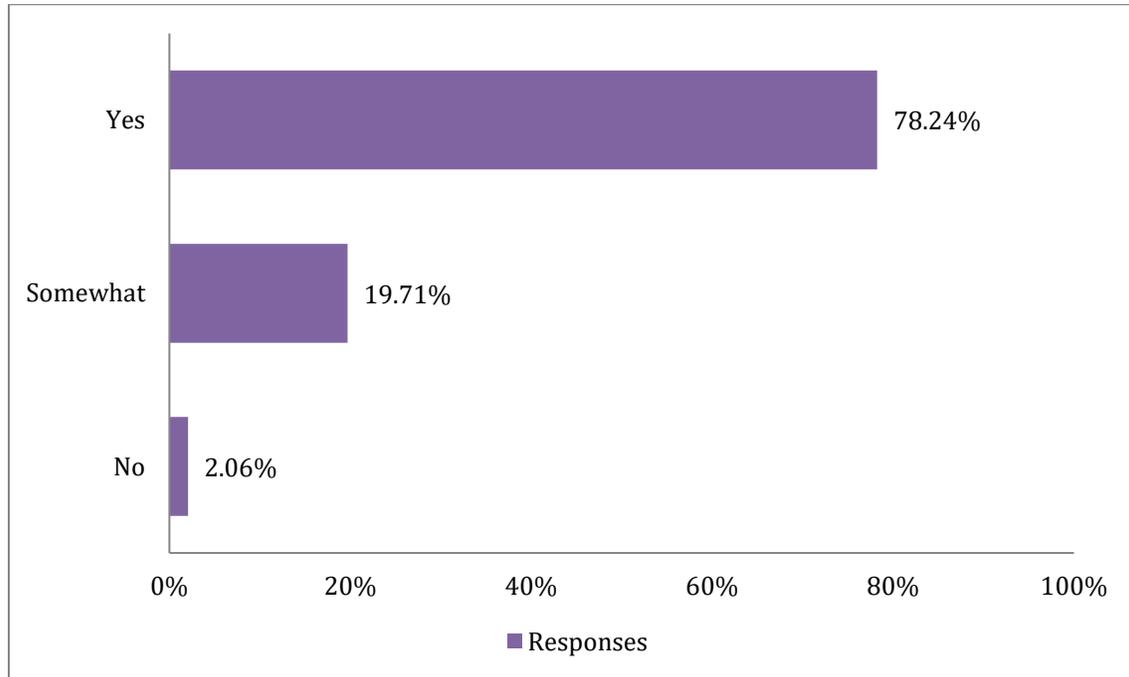


Figure 6.1

Question 17: Do you think extensive, long term testing should be done on cosmetic ingredients before they are allowed to be used in cosmetics?

The remaining questions in the survey were all measuring opinions. The first question of this type, **Question 17** asked: *“Do you think extensive, long term testing should be done on cosmetic ingredients before they are allowed to be used in cosmetics?”* Two hundred and sixty-six participants chose first answer choice: “Yes.” Sixty-seven participants chose the next answer choice: “Somewhat.” The remaining seven participants chose final answer choice: “No.”

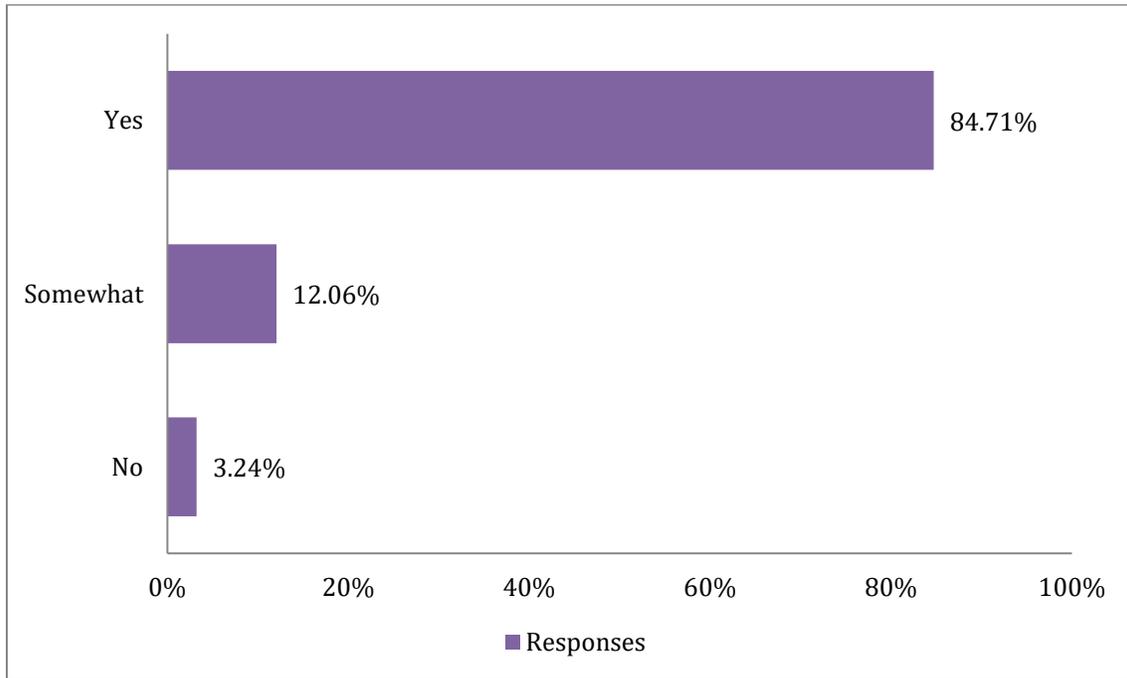


Figure 6.2

Question 18: Do you think cosmetics companies should have to register with their governing agency before selling their products?

The next question, **Question 18:** *“Do you think cosmetics companies should have to register with their governing agency before selling their products?”* Two hundred and eighty-eight participants chose first answer choice: “Yes.” Forty-one participants chose the next answer choice: “Somewhat.” The remaining eleven participants chose the final answer choice: “No.”

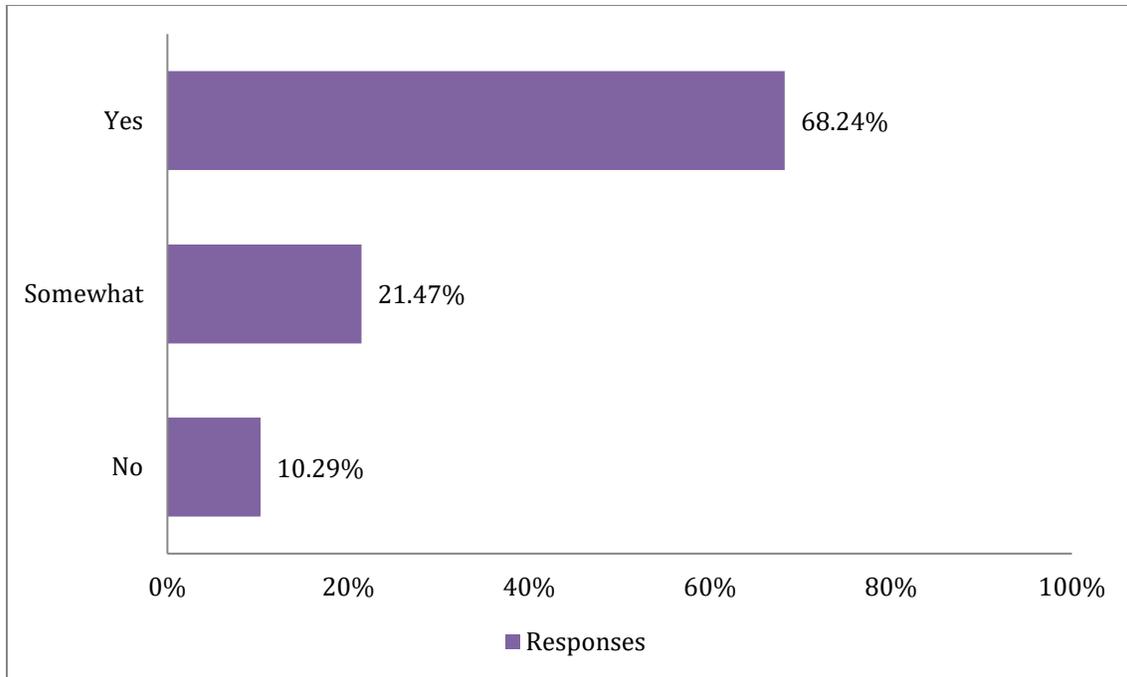


Figure 6.3

Question 19: Do you think ingredients in cosmetics that are currently on the market should be tested annually to see if there are different findings about the safety?

Question 19 asked: “Do you think ingredients in cosmetics that are currently on the market should be tested annually to see if there are different findings about the safety?” Two hundred and thirty-two participants chose answer choice: “Yes.” Seventy-three participants chose next answer choice: “Somewhat.” The remaining thirty-five participants chose the remaining choice: “No.”

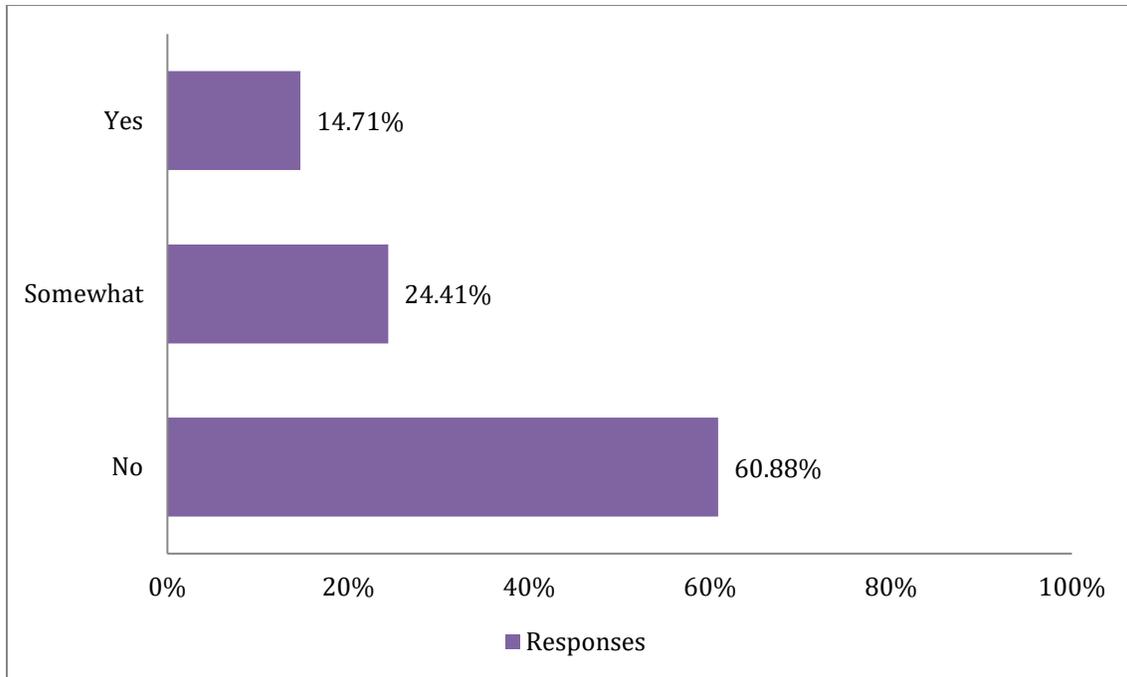


Figure 6.4

Question 20: Do you believe potentially harmful ingredients should be allowed in cosmetics if the amount of these ingredients is low enough to be safe, according to safety tests?

Question 20 was: *“Do you believe potentially harmful ingredients should be allowed in cosmetics if the amount of these ingredients is low enough to be safe, according to safety tests?”* Fifty participants chose answer choice: “Yes.” Eighty-three participants chose answer choice: “Somewhat.” Two hundred and seven participants chose the remaining answer choice: “No.”

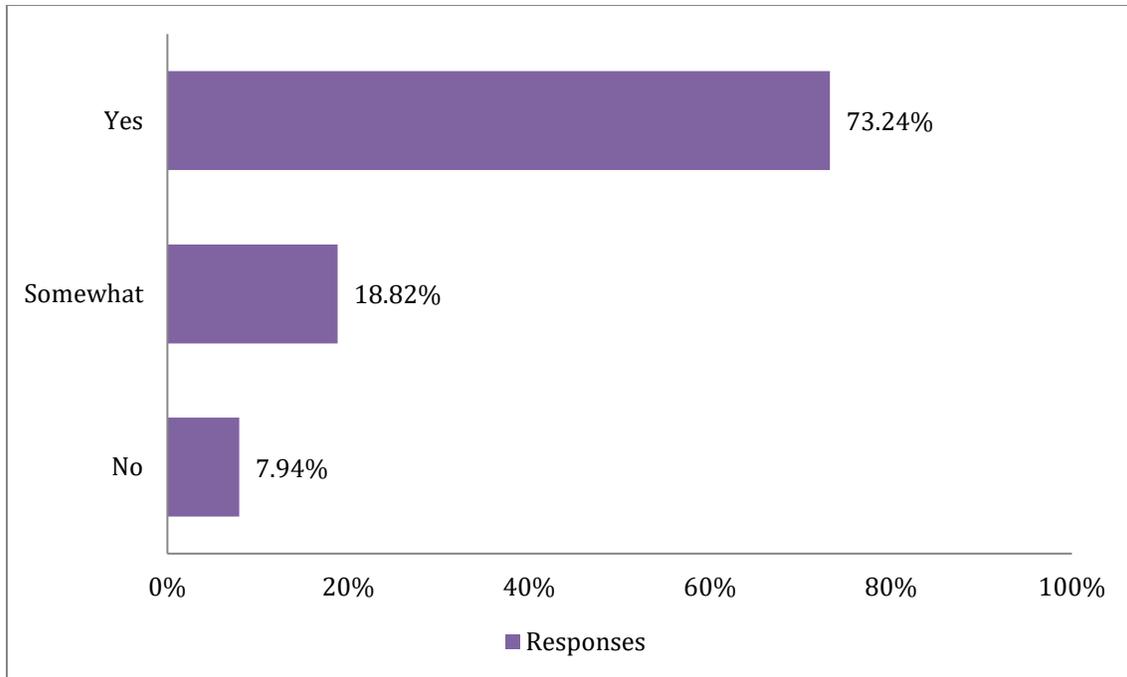


Figure 6.5

Question 21: Do you think there should be testing for the health effects of combining multiple, common cosmetics products at the same time?

The final question, **Question 21** asked: “Do you think there should be testing for the health effects of combining multiple, common cosmetics products at the same time? (For example: foundation, concealer, mascara, lipstick)”. Two hundred and forty-nine participants chose answer choice: “Yes.” Sixty-four participants chose answer choice: “Somewhat.” The remaining twenty-seven participants chose the final answer choice: “No.”

Methodology and Results

The methodology for this thesis was a survey informed by many methodologies, created to measure consumer opinions and knowledge about current cosmetics policy in the United States, natural cosmetics, and proposed cosmetics policy changes in the United States. These findings were sought after to answer the question this thesis posed which is whether or not consumers are satisfied with the current policy in place to protect them. The survey was shared via Facebook and received 340 complete responses that identified the knowledge and opinions the survey sought after. The feedback was received from a variety of people, primarily Caucasian or Native American/ Alaska Native Women. Most of the feedback was from consumers of cosmetics that wear cosmetics on a regular basis. Consumers gave feedback on current policy, natural cosmetics, and policy change suggestions from advocacy groups and scholars who have been aiming for stricter regulation on cosmetics in the United States.

CHAPTER 4 – DISCUSSION

INTRODUCTION TO DISCUSSION

This chapter discusses the survey findings of consumer knowledge and opinions about cosmetics policy in the United States to answer the question on whether or not consumers are satisfied with current cosmetics policy in place to protect them. The survey received a lot of feedback from consumers that indicate where to move with policy suggestions. The feedback indicated a desire for safer cosmetics despite the known risks of continually using conventional cosmetics. The feedback indicated that an overall majority of consumers know who is in charge of regulating cosmetics in the United States, and they do believe there are potentially toxic ingredients in cosmetics in the United States. The consumers additionally believed there should be more safety checking for cosmetics at all stages of the marketing process. Consumers reportedly felt that natural cosmetics are more expensive than their conventional counterparts and they also may not work as well or be diverse in their shade ranges. Consumers also believed that United States policy should reflect those in other developed countries that have found ingredients to be potentially harmful for use in products like cosmetics.

RESEARCH QUESTION RESTATED

Do the existing U.S. policies that have been designed to protect consumers from harmful chemicals in cosmetics match the expectations and perceptions held by cosmetics consumers about the regulations in place to protect them?

DISCUSSION

Questions Identifying Demographics Discussion

The survey results showed trends in what a majority of people responded in their opinions, knowledge, and expectations of their cosmetics policy in the United States. The first set of questions identifying demographics showed a relatively equal ratio of responses from the varying age groups. The response range from each age group was ranging from the low of 16.47% to the high of 22.65% and the rest somewhere between the two.

The United States Census Bureau (n.d.) with data from 2012-2016 reports that 87% of people over the age of 25 have a high school diploma or higher which was over reflected in this survey as every participant had a high school diploma/ GED or higher. This data from the Census Bureau does only have information for people over the age of 25, and this survey did have participants between the ages of 18-25, so the Census Bureau data may not be able to depict demographics for all participants entirely. This thesis would further like to acknowledge that there was no option for “none of the above” for people who may not have a high school diploma or GED. This oversight may have been an issue for participants having an accurate response, and several disqualified responses skipped this question, the exclusion may have been the reason. The United States Census Bureau (n.d.) with data for 2012-2016 also reports that 30.3% over the age of 25 have bachelor’s degrees or higher and that was not in alignment with these survey participants as more than half of the responders had bachelor’s degrees or higher.

The responses of men being 7.65% and women being 92% was not representative of all U.S. citizens, but it may have been reflective of the regular use of cosmetics. However, this research did seek answers from men who may use what this thesis considers cosmetics such as

lotions or cleansing products, so the number of male participants was not reflective of the greater United States population of cosmetics consumers as a whole.

The demographic questions showed that survey takers were primarily Caucasian and Native American with more than half being the former and around 30% of responders being the latter. The remaining ~15% identified as African American, Hispanic American, or Other. These results did not correlate much with different ethnic population percentages in the United States Census Bureau (n.d.) as Caucasian; white Americans make up 75% of the population, and Native American's take up only 1.3% of the population. Only ~3.5% of responders identified as African American whereas according to the United States Census Bureau (n.d.) in 2017, African American's made up about 13% of the U.S. population. Around 2.3% of survey responders identified as Hispanic American whereas they also made up around 17% of the U.S. population in 2017 (Census Bureau, n.d.). The remaining ~7.9% of survey takers responded as "Other" which was not surprising as there was no option for Asian American for example which was an oversight on the author's part. Furthermore, there are many potential options that survey takers were not given and may ultimately identify.

Questions Identifying the Use of Cosmetics Discussion

In the questions identifying the use of cosmetics, nearly all of the responders reported that they do buy and use cosmetics. Less than half (43%) of the participants reported they wear cosmetics daily, around 30% reported that they wear cosmetics a few days a week, around 20% reported that they seldom wear cosmetics and around 7% of participants responded that they never wear cosmetics. Since around 73% of participants use cosmetics on a regular or daily basis, the feedback received was predominantly from consumers who wear cosmetics very often, which means the suggestions presented truly do come from cosmetics consumers.

Questions Identifying Current Knowledge Discussion

In the questions identifying current knowledge, 64% of participants responded correctly in Question 8 that the Food and Drug Administration is the regulatory agency of cosmetics in the United States. This understanding was a positive finding to learn that most participants were aware of who is in charge of regulating cosmetics in the United States. The additional finding that ~30%, reported that they believe cosmetics companies are the regulating agency for cosmetics was notable as it is nearly a third of participants falsely believing that cosmetics companies have regulatory sovereignty. It is interesting that so many of the participants believed that cosmetics companies were the regulating agency. Although this may technically be true as cosmetics companies are seen as a self-regulating market (Watnick, 2014), they are not the regulatory agency, and that is important to know the difference if consumers wish to enact change through the regulatory agency. The remaining ~5% of participants responded with answer choices scientists and retailers, which was not surprising as those are not the regulating agencies, and most did not believe they were.

Question 9 asking whether or not there are potentially toxic ingredients in cosmetics had more than 81% of participants responding with answer choice: “Yes.” This acknowledgment by participants is fascinating to find that a majority of the consumers do believe there are potentially toxic ingredients in cosmetics, yet nearly $\frac{3}{4}$ of the participants use cosmetics on a regular or even daily basis. Furthermore, when considering that question 5 discovered that 92% of participants reportedly buy and use cosmetics and question 14 found only 30-65% of the same participants go out of their way to buy natural products, this is noteworthy. This finding aligns with the idea that sometimes products such as cosmetics are such a necessity for so many that they are still used despite their known risks (Atkinson & Kim 2015).

Question 11, which asked if cosmetics are supposed to go through pre-safety checks, with a little more than 49% choosing “I don’t know if testing is required, but I believe it should be”. This response data was a fair indication that, despite the consumer's unawareness of the current policies regarding their cosmetics, they still have the opinion that cosmetics should go through pre-market safety checks, which they are currently not obligated to do. Similarly, the second most popular answer choice, with more than 26% of participants choosing it was “No, testing is not required, but I believe it should be”. This response also shows that the belief of required pre-market safety checks is in high demand by consumers. The two combined answers with the opinion that pre-market safety checks should be required were around 75% of participant’s beliefs. The next most popular response chosen by around 22% of participants was, “Yes, safety testing is required”. This answer choice is incorrect but may indicate a false sense of security by consumers, which was evident in the Johnson & Johnson baby shampoo situation where consumers were surprised to learn formaldehyde was allowed in the product (Campaign for Safe Cosmetics, 2011; CBS News, 2012). The remaining ~2.5% of responses indicated that safety testing is or is not required, but the responders believed that was okay or that safety testing should not be required, which did not resonate with a majority of the responders.

Questions Identifying Opinions on Current Policy Discussion

In the questions identifying opinions on current policy, in Question 10, 95% of the responders believed that safety recalls should be mandatory if a product is suspected of being unsafe. This belief among so many consumers does not align with current policies as the FDA does not require cosmetics companies to do this, the FDA must take the cosmetic company with the suspected unsafe product through the court system which will then decide the further action

for a mandatory recall if proven guilty. This finding answers the question on whether or not consumer opinions and perceptions match current policy. It does not, based on this feedback.

Question 12 asked if an ingredient should be banned in the U.S. if it has been banned in another country for being potentially unsafe, the majority ~70% responded an affirmative “Yes.” The remaining 25.88% responded primarily in favor of “somewhat,” and the rest ~5% responded “No.” This response data shows that a majority of consumers are in favor of banning ingredients if other countries believe these ingredients are potentially unsafe, further answering the question and suggesting that consumer opinions do not match the expectations of their cosmetics policy in the United States.

Questions Identifying Natural Cosmetics Use Discussion

In Question 13 regarding natural cosmetics use, the first question identified whether the consumers go out of their way to purchase natural cosmetics. The responses were pretty equal across the board ranging from yes, sometimes, and no. Of the responses, ~30% reported “Yes,” ~35% reported “Somewhat,” and 33% reported “No.” These responses show that around 63% at least buy natural products sometimes, which is a vast majority of the responders.

The next Question 14 asked whether the participants felt represented in natural cosmetics. Around 35% of people chose answer choice: “Yes,” which was a lot but not enough to be a majority, which needed to be more than half of responses. About 23% of participants reported back with the answer choice: “Somewhat,” which is again still not a majority and indicates definite room for improvement. The next answer choice: “No” was chosen by ~14% of participants which is a significant number of people not feeling represented by natural cosmetics. The remaining 25% responded, “I haven’t looked.” Consumers may or may not feel represented in natural cosmetics, but for the sake of the lack of response, the information provided, indicating

that so many people do not feel entirely represented, is enough to decide that change in natural cosmetics shade range representation is necessary.

Question 15 measuring consumer perception of natural product prices, a vast majority, ~70% of responders believed that natural products are more expensive than their regular counterparts. The vast majority of the survey takers reported back that they feel natural products are more expensive than their regular counterparts, which aligned with what research before has stated and may indicate why not everyone regularly buys and uses natural cosmetics. Natural products may need to be more expensive than their regular counterparts due to the ingredients and manufacturing practices being more expensive due to higher quality ingredients, so it may be difficult to implement change regarding natural cosmetics prices (Ottman, 2006).

In Question 16, nearly 1/3 of the responders ~31% responded back “Yes” when asked “Do you feel natural cosmetic products perform as well as their top brand counterparts?” The most popular answer choice was “Somewhat,” which nearly half of the participants, ~48% chose. This answer choice while fairly neutral still shows a desire for improvement on natural products and their effectiveness. The remaining 20% chose: “No,” they do not believe natural products perform as well as their top brand counterparts. These findings do not fully align with what previous research has found in the past that 41% of consumers do not buy green products because of their perceived sense of inferiority (Ottman & Miller, 1999). This response data implies a significant improvement in discovering that the number has been halved in the last near 20 years. While these results may show improvement in consumer perception of natural products, natural cosmetics companies should aspire to prove their products’ efficiency to be more competitive with their conventional counterparts and prove to consumers they are not missing out on reliability when choosing natural products.

Questions Identifying Opinions on Proposed Policies Discussion

The remaining group of question types, questions identifying opinions, were very telling in what the consumers would like from their cosmetics policy. Each of the questions had a clear primary choice in support of cosmetics policy change. The first question in this group Question 17: asks “Do you think extensive, long-term testing should be done on cosmetic ingredients before they are allowed to be used in cosmetics?” Around 78% chose first answer choice: “Yes.” This majority response shows that most of the consumers believe that extensive, long-term testing should be done on cosmetics ingredients before they are allowed for use in cosmetics. This prevailing opinion does not align with current policy, as cosmetics ingredients do not have to go through long-term extensive testing before use. This misalignment reveals that consumers do believe extensive long-term testing should be done on cosmetic ingredients before they are allowed in cosmetics.

Question 18 asked, “Do you think cosmetics companies should have to register with their governing agency before selling their products?” Around 84%, chose first answer choice: “Yes.” This response was a vast majority of the participants, and their desires did not align with current policy and suggests a desire for policy change. Consumers believed cosmetics companies should be required to register with their governing agency before selling their products.

The next question, Question 19 asked, “Do you think ingredients in cosmetics that are currently on the market should be tested annually to see if there are different findings about the safety?” Around 68% chose answer choice: “Yes.” This majority response also reflects a desire for policy change, considering annual safety testing for cosmetics ingredients currently on the market is not a current requirement.

The next question, Question 20 asked, “Do you believe potentially harmful ingredients should be allowed in cosmetics if the amount of these ingredients is low enough to be safe, according to safety tests?” The answer choice that most participants chose was “No,” which garnered a little more than 60% of the responses. This majority response says that a 60% of consumers do not want potentially harmful ingredients in their cosmetics, even if they are considered safe in the amounts used. This is not reflected in currently policy and thus answers the question that consumer opinion does not match current policy.

The final question, Question 21 asked: “Do you think there should be testing for the health effects of combining multiple, common cosmetics products at the same time? (For example: foundation, concealer, mascara, lipstick).” A little more than 73% of participants chose answer choice: “Yes.” This nearly $\frac{3}{4}$ majority of participants indicate a desire for change in current policy as testing for the health effects of combining multiple, everyday cosmetics products at the same time is not the required practice.

CONCLUSION TO DISCUSSION

Based on consumer feedback to this thesis’s conducted survey, the research question on whether or not consumer opinions and perceptions are met by current cosmetics policy was established. This conclusion is that consumer opinions and perceptions do not appear to be met by their current cosmetics policy. This discovery further leads into what can be done about this disconnect from consumers to their policies that are in place to protect them.

CHAPTER 5 – CONCLUSION

INTRODUCTION TO CONCLUSION

This thesis sought to understand whether or not consumer's opinions and perceptions are met by the cosmetics policies that are in place to protect them. What was concluded by the results of the survey performed in this thesis is that consumer's opinions and perceptions are not met by cosmetics policies. Thanks to the research, an important gap in the knowledge has been partially addressed so that in part, it can help policy makers and consumers reduce overall exposure to harmful chemicals from cosmetics.

NATURAL COSMETICS MARKETING SUGGESTIONS BASED ON CONSUMER OPINIONS

Based on the feedback from consumers, it is concluded that there are several barriers in place that may be preventing consumers from wanting to or being able to buy or use natural cosmetics. Most of the surveyed consumers believe natural products are more expensive than their conventional cosmetic product counterparts. Additionally, not every consumer feels represented by natural cosmetics regarding foundation shade range, and some believe the natural cosmetics products do not work as well as their top brand counterparts. For this to change and for natural cosmetics to potentially get a better reputation and satisfy more customers, there are several suggestions for marketing and manufacturing practice change.

The first suggestion for a change in natural cosmetics is to market to all skin tones and to carry a variety of foundation skin tone ranges that reflect every consumer. If brands would like to see success like that of Fenty Beauty, catering to all consumers is a great way to do as it only

expands the potential for success (Hope, 2016; Shatzman, 2017). Consumers want to feel included in products they want to purchase and this suggestion is an opportunity to do that for consumers and provide potential success to natural cosmetics companies.

The second suggestion for natural cosmetics change is to show perhaps that these cosmetics do work as well as their conventional counterparts (Ottman, 2006). For example: Having a wear test to show how long these products last for consumers as they may typically wear them. Prove that these products will last throughout the day, and if they do not last throughout the day, work to make them wear longer to keep the consumer happy. Another potential way to implement suggestion 2, is to show that these products work as well as their conventional counterparts. A side-by-side comparisons with their competitors of conventional cosmetics could establish the natural cosmetics efficacy. This comparison should not be a way to put down other makeup brands or to shame people for not wearing natural cosmetics but rather show that these products work just as well and should be a viable option for the conscious consumer.

The third suggestion for natural cosmetics is for companies aim to make these products affordable, or at least as affordable as their conventional counterpart products. These products, while they are often of higher quality, may reflect this in their price (Burton, 2017), but working to make these products affordable for every consumer should be highly considered and dealt with accordingly. It is acknowledged that there would likely be monetary loss but if there is room for the price change then that should be implemented. Being more inclusive includes making products more affordable for consumers who may be lower income but want safer products or consumers who do not wish to spend a lot of money on cosmetics products but want high quality safer products.

The fourth and final natural cosmetics marketing suggestion is that Natural Cosmetic companies should practice high corporate social responsibility by maintaining transparency and striving for growth when faced with adversity. If a company chooses to be a natural cosmetics company this should be shown not only in ingredients but also in actions (Nyilasy et. al, 2014). Companies should strive to be agile and adapt to what consumers want, which is safety and reliability through company practices.

UNITED STATES POLICY CHANGE SUGGESTIONS BASED ON CONSUMER OPINIONS

Based on the results of this survey, it has been concluded that the majority of consumers desire change from their current cosmetics policies. To answer the research question in accordance with the survey results, the existing U.S. policies that have been designed to protect consumers from harmful chemicals in cosmetics do not match the expectations and perceptions held by cosmetics consumers about the regulations in place to protect them. As such, below are cosmetic policy change suggestions based on the opinions of consumers.

The first suggestion based on consumer feedback in question 10, where 95% majority of consumer participants indicated that the FDA should require mandatory product recalls if a product is suspected of being unsafe. In order to do this, the process in which FDA intervention is currently must be changed from having to go through court systems to the FDA having the ability to intervene and demand the products be taken off the shelves.

The second policy change suggestion is based on feedback in question 11 and that is pre-safety testing should be required before products are allowed for sale in the United States. Question 11 feedback indicated that 49% of consumer participants did not know if safety testing

is required but believed it should be. Furthermore the question discovered an additional 26% knew that safety testing is not required but believed it should be, and another 22% believed testing is already in place making a combined total of 97%. This consumer participant feedback indicated that there is a strong belief that pre-safety testing of cosmetics should be a requirement before becoming available for sale. As of now, the findings of the CIR panel are what the minimal ingredient restrictions are based on (Watnick, 2014; Cosmetic Ingredient Review, 2018). If this reliance continues then only CIR tested and approved ingredients should be allowed for inclusion in cosmetics, which is only about 13-20% of ingredients included currently in cosmetics (Daum, 2006; Houlihan, 2018). Overall, pre-safety testing should be conducted for all cosmetics and their ingredients before allowing them for sale.

The third policy change suggestion based on consumer opinion is from question 12 feedback where 75% majority of consumers decided if an ingredient is banned in another country for being suspected as potentially unsafe, then that ingredient should be banned in the United States as well. The United States should ban ingredients that other countries have determined as potentially unsafe. This means that the United States should be up to date with other countries findings and make decisions based on these findings that reflect more of a precautionary approach rather than the current approach which is more reactionary. If they choose to do safety testing in order to decide whether or not the ban is necessary should be fine but the testing should also be conducted in an unbiased manner. This may include testing done through multiple parties that do not have connections to cosmetics companies like the CIR currently does.

The fourth policy change suggestion after receiving feedback that 78% majority of consumer participants chose “Yes” is to require extensive, long-term safety testing on ingredients before being allowed for use in cosmetics products. As of now, this is not a

requirement as noted previously that a majority of up to 87% of cosmetics ingredients have not been safety tested (Daum, 2006; Houlihan, 2018). This testing should be done to ensure safety and not subject consumers to potentially harmful ingredients because consumers do not want that. This practice reflects a good CSR which consumers desire from their cosmetic companies and consequently the FDA, which authorizes these products.

The fifth policy change suggestion based on the overwhelming 84% majority of consumer participants in Question 18 choosing “Yes” is that cosmetics companies should be required to register with the FDA before being able to sell their products. This procedure would make it easier for the FDA to keep track of cosmetics companies that under current regulation is not always possible to do. This registration should potentially include making the Voluntary Cosmetic Registration Program mandatory.

The sixth policy change suggestion in response to question 19 receiving a 68% majority “Yes” response when asked if ingredients in cosmetics currently on the market should be tested annually to determine if there are different findings about the safety, is that annual safety testing on cosmetics ingredients be required by the FDA. This suggestion is based by the practices of companies like the Honest Company (The Honest Company, 2018). It is the suggestion of this thesis to require the annual testing to take place at least every 5 years as science advances to see if there are any new findings so not to be overkill but to be practical. If there is an ingredient that has been suspected of being unsafe before the time period of annual safety testing is due, the ingredient should take priority and be tested as soon as possible in case there are any safety issues that previous safety testing did not detect.

The seventh policy change suggestion as suggested by the 60% majority in question 20 choosing “no”, concluding that potentially harmful ingredients should not be allowed in

cosmetics even if these ingredients are considered low enough to be safe according to safety tests. These ingredients should not be allowed until they have been discovered to be definitively safe for use. For example, this should include determined safety like lead in cosmetics (U.S. Food and Drug Administration, 2018). Lead and other potentially harmful ingredients considered safe at low levels should not be allowed in cosmetics because consumers do not want potentially harmful ingredients in their cosmetics products despite safety testing concluding it is safe. Consumers do not appear to be content with taking the chances the safety testing expects them to.

The eighth and final policy change suggestion in accordance with the 73% majority of participant consumers who chose yes in question 21 is that there should be required testing for the health effects of combining multiple, everyday cosmetic products at the same time. This testing should be done to ensure that the cosmetics cocktail that is common among many cosmetics wearers be safe overall and not in just one single cosmetics product that the consumer may be wearing over one particular occasion. Current safety testing is conducted with one product and should instead be conducted with multiple products over an extended period of time as many consumers wear cosmetics consistently and in combination with other cosmetic products. This testing is important to ensure that harmful chemical reactions do not occur with concurrent cosmetic wearing practices (Watnick, 2014).

ADDITIONAL POLICY CHANGE SUGGESTIONS BY THE AUTHOR

Additional policy change suggestions by the author are to include definitions of natural and organic cosmetics and suit them to what consumers want out of these products which are safe, high quality, sustainable ingredients. A final policy change suggestion is that companies should not have the ability to name their ingredients as things like “fragrance” under this

regulation as it is not entirely telling of the cosmetic ingredient and could be a potentially toxic ingredient.

CONCLUSION TO THESIS

Humans are exposed to a variety of toxic chemicals through many means of passage into the body. Cosmetics are a potential toxin that is often not given thought by consumers and additionally, there is currently not a lot of regulation by the regulatory agency, the U.S. Food and Drug Administration, in place to ensure cosmetics safety for consumers.

There are many different conclusions on the safety of cosmetic ingredients currently allowed for use in cosmetics. There is opposition on either side, safe or unsafe, that has yet to be fully concluded for many ingredients. As of now with inconclusive safety, there needs to be more done to ensure that cosmetics are as safe as possible and should exclude use of potentially unsafe ingredients in cosmetics as a precautionary measure.

Through the use of a survey, the question on whether or not consumer's opinions and perceptions are reflected in current cosmetics policy in the United States in place to protect them was answered. The answer is clear, consumer's opinions and perceptions do not align with current cosmetics policy in the United States. Consumers want exhaustive regulation like those in other developed countries. Consumers are the primary stakeholders when it comes to cosmetics regulation yet they do not have a say in the policies that mandate the regulations. Consumers should be considered in cosmetics policy as policy decision-makers as they are the ones that these policies are in place to protect.

Overall, this thesis found that consumers have valuable opinions and the ability to enact change not only through policy, but also through their purchases with their consumer votes.

While policy change may not always be entirely possible, consumers do have their consumption habits and thus market informing opinions and beliefs that could ultimately sway the cosmetics market into one using only the latest ingredients that are known to be safe. As of now, consumers have no choice other than to wear natural cosmetics that may not be as affordable or diverse in their shade ranges, or take the risks that are imposed on them, and it is obvious through cosmetics policy in other countries that there are safer ways to conduct cosmetics regulation. Consumers desire similar values through their own cosmetics policies in the United States. Cosmetics policy in the United States should be adapted to enact these values and to include consumers as cosmetics policy decision makers.

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Appendix

1.) ELECTRONIC CONSENT: Please select your choice below. Clicking on the "agree" button below indicates that: • you have read the above information• you voluntarily agree to participate• you are at least 18 years of age. If you do not wish to participate in the research study, please decline participation by clicking on the "disagree" button.

-Agree

-Disagree

2.) What is your age?

-18-24

-25-34

-35-44

-45-54

-55 and Over

3.) What is your education level?

-High School/ GED

-Associates Degree

-Bachelor's Degree

-Graduate Degree

-PhD/ Doctorate Degree

4.) What is your gender?

-Male

-Female

-Transgender

-Other

-Prefer not to answer

5.) What is your ethnicity?

-Caucasian

-African American

-Hispanic American

-Asian American

-Native American/ Alaska Native

-Other

-Prefer not to answer

6.) Do you buy and use cosmetics? (Make up, facial lotions, lotions, face wash, nail polish, etc.)

-Yes

-No

7.) How often do you wear cosmetics?

-Everyday

-A few times a week

-Never

-Seldom

8.) Who do you think is in charge of regulating the cosmetics industry in the United States?

(Upholds laws and regulations applying to cosmetics on the market in the US)

-Cosmetic companies

-Food and Drug Administration

-Retailers

-Scientists

9.) Do you think there are potentially toxic chemicals in cosmetics in the United States?

-Yes

-Somewhat

-No

10.) Do you think a cosmetics product recall should be mandatory if a product is suspected of being unsafe for use?

-Yes

-Somewhat

-No

11.) Are cosmetics required to be tested for safety before being sold in the United States and, if not should they be?

-Yes, testing is required

-No, testing is not required and I believe that is OK.

-No, testing is not required but it should be

-I don't know if testing is required, but I think it should be.

-I don't know if testing is required, but I think it is unnecessary.

12.) Do you think that if an ingredient is banned in another country for being potentially unsafe, it should also be banned in the US?

-Yes

-Somewhat

-No

13.) Do you go out of your way to buy natural cosmetics?

-Yes

-Sometimes

-No

14.) Do you feel represented by natural cosmetics? (Foundation skin color shade range)

-Yes

-Somewhat

-No

-I haven't looked

15.) Do you find natural products to be more or less affordable than normal products?

-More expensive

-The same

-Less expensive

-Unsure

16.) Do you feel natural cosmetic products perform as well as their top brand counterparts?

-Yes

-Somewhat

-No

17.) Do you think extensive, long term testing should be done on cosmetic ingredients before they are allowed to be used in cosmetics?

-Yes

-Somewhat

-No

18.) Do you think cosmetics companies should have to register with their governing agency before selling their products?

-Yes

-Somewhat

-No

19.) Do you think ingredients in cosmetics that are currently on the market should be tested annually to see if there are different findings about the safety?

-Yes

-Somewhat

-No

20.) Do you believe potentially harmful ingredients should be allowed in cosmetics if the amount of these ingredients is low enough to be safe, according to safety tests?

-Yes

-Somewhat

-No

21.) Do you think there should be testing for the health effects of combining multiple, common cosmetic products at the same time? (For example: foundation, concealer, mascara, lipstick)

-Yes

-Somewhat

-No