

Ethical issues in cosmetic industry

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Abstract

The article aims to examine ethical issues in cosmetic industry focusing on health and safety issues, work conditions, discrimination, marketing campaigns, animal testing, and environmental issues. First, we discuss the ethical dimensions of the relations between cosmetic companies and their employees or customers. Second, different environmental matters are presented considering sourcing materials, producing and consuming cosmetic products. Packaging and waste disposal problems are concerned as being important part of the product lifecycle in the sector. It is accented that regulation and legislation have impact on ethics in cosmetic industry. Changes in consumer demand reflect and impose substantial shift to sustainability principles by the cosmetic companies. In this regard, various measures and good practices are presented in order to illustrate the shift to natural cosmetics.

Keywords: ethics, cosmetic industry, nanocosmetics, green cosmetics, sustainability, animal testing

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Introduction

In the new globalized world with degraded ecology and dwindling resources, the pursuit of new consumers and the need to sustain competitive advantages while observing sustainability principles has become more difficult for companies. Different challenges stemming from the market and environment exert immense pressure in various aspects. Whether it is about the pressure for lower production costs at the expense of other raw materials as substitute ingredients, tension in the supply chain for neglecting quality and control by the partners, or desire for new markets and customers with compromised advertising campaigns, it all pushes companies to their limits, sometimes on the border of neglecting ethics in their actions. These hurdles have significant impact on the overall companies' performance in terms of their ethical business conduct.

Consequently, business practices nowadays provoke moral questions and debates regarding fundamental ethical standards. Matters of working conditions, health and safety of both employees and consumers, environmental issues, demands for greater product safety, waste disposal have been increasingly put in agenda. Those ethical issues are evident in some of the largest industries around the world and cosmetic industry is no exception. As an industry with strong impact on environment it is raising significant debates both in the sector itself and in society.

People have been using cosmetics for thousands of years. Today, the vast majority of world population use cosmetics every day to protect their health, enhance their well-being and boost their self-esteem. In the European Union (Regulation 1223/2009), cosmetics are defined as “any substance or mixture intended to be placed in contact with the external parts of the human body (epidermis, hair system, nails, lips and external genital organs) or with the teeth and the mucous membranes of the oral cavity with a view exclusively or mainly to cleaning them, perfuming them, changing their appearance, protecting them, keeping them in good condition or correcting body odors”. The cosmetics market is one of the largest and most thriving markets in the world. It was estimated to be worth more than 620 billion U.S. dollars in 2023 and by 2028, the market is projected to reach over 700 billion U.S. dollars in value (Petruzzi, 2024). Despite a small setback in 2020, the need for beauty, basic personal care and hygiene products resulted in an almost constant growth since 2004. The forecasted revenues for the segment that includes the face, lips, eyes, nails and natural cosmetics are nearly 129 billion U.S. dollars by the year 2028 (Petruzzi, 2024).

Achieving competitive advantage in such market has become strategically important in the cosmetic industry over the past two decades. Consumers are becoming increasingly conscious of the issues related to cosmetic products. This results in a greater preference for natural, green, organic, or "chemical-free" options (Popescu et al., 2024; Petruzzi, 2024). The global revenue of the natural and organic cosmetics market added up to nearly 13 billion U.S. dollars in 2023, and it was forecast to notably increase by 2028 (Petruzzi, 2024). Besides being perceived as safer, the demand for natural cosmetics reflects the trend for growing consumer concern for ethical matters and environmental factors as well.

Respectively, in this highly competitive industry, cosmetic companies may be forced by different circumstances to take some actions beyond ethics regarding their employees, customers, suppliers or other stakeholders. Nowadays, ethics in business is even more vital for sustaining competitive advantages, to satisfy the different customers' needs, and to address the growing need for environmental awareness. The cosmetic industry poses plenty of ethical problems. As an industry with impact on animals, humans and environment, it is highly related to health issues, safety regulation, animal exploitation and testing, raw materials sourcing, use of synthetic ingredients, deforestation, water consumption, and supply chain issues regarding selection and partnership with appropriate suppliers. Common ethical issues with discrimination, racism, work conditions as exposure to chemicals, environment conservation and protection are evident as well, but not only. There are specific problems and they concern sustainability in the industry throughout the product lifecycle (including selecting raw materials, packaging), as well as offensive and misleading marketing campaigns. The path to eternal beauty and environmental friendliness is shaped by palm oil usage as substitute to petrochemicals and nanocosmetics as an innovation. Hence, today's cosmetic industry is witnessing a remarkable transformation due to innovative green technologies enabling the development of eco-friendly and sustainable natural cosmetics (Popescu et al., 2024). Consequently, the requirements for clean planet transform into requirements for clean cosmetics, organic products and zero-waste packages.

Moreover, cosmetic companies operate in different social, economic and cultural surroundings which enhances the ethical dimension of their actions. The fierce competition and changing consumer behavior assume marketing messages to be more sensitive to those differences and respond to real needs for personal care, accurate information and beautification. Consumers are critical to products on the market and check information before purchasing in terms of quality, innovative, safe, and sustainable products. Leader beauty manufacturers, to mention L'Oreal, The Estee Lauder Cosm., LVMH, Beiersdorf, Shiseido, Natura and Co, Coty, showed that ethics, sustainability and competitiveness can coexist together.

In this light, the paper discusses the dimensions of ethics in cosmetic industry. Particularly, the article aims to outline the specifics and complexity of intertwining issues as discrimination, oppression, animal testing, health and safety aspects, marketing campaigns, environmental and sustainability matters arising in the industry. The first part elucidates the ethics in cosmetic industry in terms of how the sector can be harmful and offensive to people. Then we elaborate how detrimental it can be to the environment. Later, regulation and legislation on the aforementioned issues have been considered in terms of its direct impact in the sector. Finally, green actions, new technologies and good practices are presented for resolving ethical problems.

1. Ethical issues in cosmetics related to people

Our discussion in this section elaborates health and safety issues, discrimination and unethical marketing campaigns in the cosmetics industry.

As a starting point we focus on health and safety aspects of cosmetic industry's business. The eternal desire and strive for beauty are powerful drivers for constant growth in the cosmetic industry. As they are related with safety and wellbeing of human beings, pursuing growth correlates with integrity and fairness as fundamental ethical values. If companies are not fair with their

customers about the products regarding their ingredients, expected results or possible risks it may have consequences to the health of people. Some chemicals and synthetic substances have already been prohibited due to their risks to health. Nevertheless, recently, hazardous chemicals, banned under European Union law, have been found in 6% of inspected cosmetic products or 285 products. Discovered banned ingredients were perfluorononyl dimethicone; perfluorooctylethyl triethoxysilane; perfluorononylethyl carboxydecyl PEG-10 dimethicone; and cyclopentasiloxane (D5), cyclomethicone (a blend of D4, D5 and D6) and cyclotetrasiloxane (D4) (Wray, 2024). For instance, perfluorononyl dimethicone, which provides a ‘slippy’ effect, making products easier to apply, is persistent in the environment, toxic to reproduction and suspected of causing cancer. Cyclotetrasiloxane and cyclopentasiloxane dissolve slowly in the environment and build up in humans and other species, with D4 also suspected of damaging fertility. These substances have been identified as persistent organic pollutants (POPs) or (very) persistent, (very) bioaccumulative and toxic (PBT/vPvB), meaning they adversely affect human health and the environment (Wray, 2024). Even those substances are banned, obviously they can be found in products placed on the market which endangers consumers’ health and well-being. Exposure to potentially harmful chemicals through the use of personal care products presents a substantial unethical act. In a research, women report using a median of eight products daily (with some reporting up to 30 products daily) providing a daily dose of a collection of chemicals that interact synergistically or antagonistically. Exposure to these chemicals has been linked to endocrine disruption, cancer, reproductive harm, and neurodevelopmental delays in children (McDonald et al., 2022). This matter can easily be resolved with more strict control measures and regulation all over the world.

Some of the fundamental ethical dimensions concern the relationship between the organization and employees. Possible exposure to chemicals as part of the manufacturing process and working conditions was something common for the past decades, but it is not an acceptable option today. There has been a shift from the focus on the acute effects of single chemical pollutants to an emphasis on chronic exposures of complex mixtures across the life course (McDonald et al., 2022). The use of dangerous substances and toxins while preparing product for self-care or personal hygiene is absolutely unacceptable and unethical. Historically, the majority of health and safety issues on the workplace have been resolved during the past years. Adopted legislation and regulation, enhanced control and public will for changes have prevailed and the majority of the reasons and factors for threatening health have been removed or minimized. Those changes are relevant not only for the cosmetic industry, but are general for many more manufacturing industries and they depend on the country, the extent of economic development and the presence of regulations. But even though, the bitter reality is that companies from more developed countries outsource their manufactures into less developed countries with none or minimal legislation regarding worker’s rights, working conditions, forbidden substances and materials or very low level of toxic chemicals and synthetics allowed concentrations. Cosmetic industry is no exclusion in terms of correlation between existing regulation and economic development extent. In some parts of the world the most dangerous and toxic chemicals are forbidden. For instance, in the USA general ingredients disclosure, plus the class of PFAS (per- and polyfluoroalkyl substances) chemicals, stricter regulation of the cosmetic supply chain, and greater cosmetic safety protections for women of color and salon workers exist (McDonald et al., 2022). Nonetheless, there are countries with no regulation in cosmetics sector.

Besides forbidden substances, certain ambiguities exist for some new technologies applied in the sector. The quest for safety and innovations has encouraged manufacturers to incorporate emerging technologies and one of those is nanotechnology (Basir et al., 2024). Nanotechnology is a technique that can improve the performance in the pharmaceutical, dermatology, and cosmetics fields. Nanomaterials are chemical substances or materials comprising very small particles of different shapes and sizes no larger than 100 nm. Many occur in nature, but most have been

engineered to exhibit novel characteristics such as increased strength, chemical reactivity or conductivity compared to their non-nano counterparts (Regulation 1907/2006).

Due to their small size, they exhibit remarkable physical and chemical properties that compose more stable and effective technology for delivery systems in the cosmetics field and are helpful assistants for solar protection, hydration, elimination of spots and reducing the aging signs. Nonetheless, enhanced performance and efficacy are evident due to uniform spread and permeability in applying moisturizer, anti-aging, antioxidant, and anti-acne products. They improve the formulation's effectiveness as they penetrate well into skin barriers, deliver the right amount of ingredients to the desired body part, and are more stable compared to conventional bulk materials (Basir et al., 2024). Several types of nanomaterials have been widely used and found in foundation, lotion, powders, hair care, eye cream, sunscreen, mascara, and anti-wrinkle cream such as titanium dioxide, zinc oxide, gold, silver, and silica nanoparticles. Titanium dioxide and zinc oxide are used as UV filters in sunscreen because they eliminate the chalky white appearance of traditional sunscreens (Basir et al., 2024). Gold nanoparticles possess strong antifungal and antibacterial properties and are applied in hair dyes, nail care products, face masks, anti-aging creams, sunscreen, and deodorants (Basir et al., 2024). Silver nanoparticles are applied in shampoos, toothpaste, acne cream, nail care products, deodorant, and lip products as they are excellent antimicrobial agents. Silica nanoparticles absorb excess moisture, improve the distribution of pigment in cosmetic products and present an anti-caking agent (Basir et al., 2024).

The fact that nanomaterials are applied in cosmetics gives the impression that those particles are safe. Regarding the safety assessment of nanocosmetics, scientific studies have raised justified concern over the potential hazards about toxicity associated with the penetration of nanoparticles through the dermis and in the bloodstream to harm human health. Some of the potential hazards associated with application of nanocosmetics are related with biological damage to the skin, oxidative stress, accumulation of gold nanoparticles in the liver and spleen, increase in the number of white blood cells and many more on different level and area (Basir et al., 2024). The toxicological effects of nanomaterials occur due to the change in engineered nanomaterials' physicochemical and structural properties (Basir et al., 2024). The problem is that many companies do not declare that they are using nanoparticles and consumers are not aware that they are actually nano-consumers.

As aforementioned, clean beauty is becoming more popular nowadays but we cannot neglect the fact that beauty has a cost and it may turn into one that is unaffordable for some. Usually, natural cosmetic products are costlier than their toxic counterparts and there might be unintended consequences, including a widening gap in inequitable chemical exposures and affecting the most vulnerable users (e.g., youths) (McDonald et al., 2022). So, unintendedly, cosmetic companies may offend young people or people in marginal groups by excluding them.

Discrimination is another unethical action from companies. As the equality is a fundamental right of people, they should not be discriminated on any ground, otherwise it is seen as a violation of their basic human rights. Discrimination in the cosmetic industry is observed in several ways: between men and women as different groups of consumers or different behaviour towards diverse ethnic and national groups. Men and women often buy same or similar day-to-day products. But research shows that consumer products targeted and advertised to women are sometimes more expensive than comparable products marketed to men. This disparity is referred to a so-called pink tax. Some stakeholders express concern that is a discrimination because the higher prices of women's accessories are not grounded on differences in the used technologies and materials. Gender-based price disparities are prevalent in several sectors, but one of the most visible is personal care products. These include, for example, soaps, lotions, razor blades and deodorants that are marketed specifically to either women or men (World Economic Forum, 2022). Often products are given stereotypical names and put in coloured packaging that is specifically targeted towards certain gender. For instance, Gillette' reliance on such practices and its continued use of the pink

tax has angered society with its advertising campaigns (Tempesta, 2019). For example, an analysis in the UK found that women's deodorant was on average 8.9% more expensive than men's and women's facial moisturiser was 34.28% more expensive (World Economic Forum, 2022). Another problem is that the pink tax imposes an economic burden on women around the world - especially since women continue to earn less than men. So, those different prices only deepen existing inequalities in society about glass-ceiling, unequal payment for men and women and different career opportunities. It is worth noting that those issues are also form of gender discrimination, but concentrating on specific ethical issues in cosmetic industry, it is not the place to discuss these matters in detail.

But it is the space to address the fact that many western global brands impose certain beauty standards through their advertising campaigns for fairness promotion. What can be perceived as racism and oppression is the fact that, for decades, Black women needed to conform to white beauty standards. For example, the stigma of Black hair in its natural state justified the amount of chemicals needed to straighten it up. Likewise, the existing products launched on the market were more suitable for white complexion, such as lipsticks, foundations, shadows, skin lighteners. Nowadays, companies are adopting different strategy and produce and offer different shades of "nude" products, various makeup colours that are made to match women's diverse complexions.

However, even with the revolution in cosmetic products regarding different complexion, Indian women are still exposed to huge and cruel oppression and pressure for white skin. The reason is that the beauty definition in Asia is totally different from the one in the West. In Asia, the creams that whiten the skin dominate the cosmetics market, while the Western women prefer getting tanned. Tones of whitening products are sold when trying to match the distorted beauty standards. In India, the fascination with fair skin has its roots in folklore, cultural beliefs and caste system. White skin is associated with prosperity, wealth, and good life. Dark one, just the opposite, is perceived as someone who is bound to fail. In the past, Royal Indian women used to apply pearl extracts. Later, during the colonial British times people in power were white and those with dark skin at the receiving end. The oppression for fair skin is related with marital possibilities as well. Something more, Indian women have been subdued to the whitening mania for decades and now with men being more conscious, they are also audience for whitening, brightening, radiant products (Chauhan et al., 2019). However, the truth is that even tons of whitening tubes cannot change what is genetically determined by the amount of melanin in the skin. Dermatologists believe that skin complexion is an evolutionary trait that resulted from natural selection and ultraviolet exposure over thousands of years. The race and genetic lineage determine the structure of melanin. According to studies, achieving fairness up to 20 % is possible but not more than that (Chauhan et al., 2019). The fairness creams only block the sunrays and prevent the secretion of melanin. Lighter skin complexion means reduced melanin in the skin and reduced melanin is linked to skin cancer and melanoma. Thus, the cosmetic companies are exploiting the culturally rooted traits and continue to present the products as being able to change the structure of skin type and accordingly to secure better life for men and women. As Chauhan and Tiwari (2019) argue, the problem is that cosmetic companies cannot dare to impose such ideas in their countries of origin. Whether this is a covert form of racism or culturally rooted matter, it is still quite ethically questionable. Companies should deal with greater awareness about the injustice of beauty and greater attention to the policies that affect social norms and health.

Moreover, products' names should reflect their real properties. In the case of cosmetic industry, who confirms that those products really can whiten or brighten the skin as it is declared? As we discussed, reduced melanin may have consequences to the health and well-being of humans. It is fundamental ethical norm to be honest with customers and any action that mislead them is unethical. Hence, positioning products on the market via advertising campaigns that are not fair and right on 100 percent is unethical.

In this vein, it is worth noting that cosmetic products are usually considered vulnerable in a marketing ethics context because they differ very little from each other. Accordingly, packaging and marketing play key roles in competitiveness (Kim et al., 2016). Besides the fact that managers should offer products that are safe and pose the least risks, they are also suggested to set rational and justifiable prices. The issue of ethics in marketing practices has become increasingly pertinent due to a rising number of consumer complaints (Kumar et al., 2016). As the cosmetics market continues to grow, and the integrity of businesses remains debatable, it would be useful to elucidate that the unethical practices include, but are not limited to misleading promotion campaigns, consumer rights violations, harmful products, contradictions about ingredients and safety, and unverifiable assertions of marketing campaigns about featured outcomes of certain products (Kumar et al., 2016).

Marketing tools exploit consumers' insecurities about appearance and behavior. Particularly, the abovementioned case of Indian women obsession with whitening products illustrates the unethical matter in marketing practices of cosmetic companies. Such advertising campaigns not only rob the consumers of their self-esteem but also infuse a false sense of inferiority and guilt (Chauhan et al., 2019). Advertising appeals are very stimulating in promoting such products through media images to establish an emotive bond that their creams not only brighten their complexion but also make them beautiful and confident. Even put in a market where fair complexion is believed to be the carrier for better life, companies should not take advantage of that and specify the possible extent to which the product can change complexion. Campaigns are not respectable to women as they claim that fair skin is the only way to be successful. In general, such messages implicate you are a less as a person unless you fit the standard. Pursuit of beauty is inherent for centuries. It is beyond comprehension that the consumer does not make consumption choices solely from products' utilities - what they do, but also from their symbolic meanings, i.e. what they communicate. For example, to demonstrate a separation between the upper and lower classes, cosmetic companies accord status to the consumption of goods that had little or no functional value as is the case with whitening products. Symbolic meanings of brands can be used to communicate to other people the kind of person we wish to be seen as. The beauty industry is no different and constitute a consumer world that relies on these symbolic meanings.

2. Environmental ethical issues in cosmetic industry

Until now, we have outlined ethical issues related to people, no matter whether they are employees or consumers and how actions by the cosmetic companies may hurt or put in a hazard them. But humans are not the only ones that can be hurt. There is another big stakeholder and that is environment. The discussion will now focus exactly on the ethical issues arising in cosmetic industry with impact on the environment.

Over the past few decades, human activities are changing the environment on a global scale. In this aspect, we begin with those creatures that are voiceless unless someone stands up for them, namely animals. Animal ethics is largely discussed in cosmetics field. Focal point is animal testing and, specifically, whether it is possible to have beauty without animal testing. Cosmetics are simply products designed to be applied to the human body for the purposes of cleansing, beautifying, enhancing attractiveness or changing appearance. Hence, testing on animals to ascertain whether cosmetic products are suitable for human use is widely observed in the cosmetic industry. Thousands of animals are poisoned and killed every year through cruel tests devised since the 1920s to assess the toxicity of cosmetic products and their contents (Dodanwala et al., 2023).

Animal testing is longtime debated ethical issues in society and literature. Animals' issues were some of the first to raise public awareness as result of active campaigns against cruelty to animals. It is morally wrong to harm animals. Simultaneously, it is argued that animals deserve moral recognition. Contemporary ethics points out that each individual, no matter human or animal,

has rights that should not be violated (Dimitrova, 2020). Part of the problem is the attitude towards them not as for living creatures but as soulless objects.

Although animal testing of cosmetic products has been banned in the EU, this does not prevent certain manufacturers from using this testing method. Part of the problem is that tests on animals are banned in EU, but not in every other country. New Zealand and the United States of America have been taking steps to ban animal testing in cosmetics (Dodanwala et al., 2023). At the same time, research has shown that consumers of cosmetic products are sensitive to animal testing and vehemently oppose it. Moreover, they are increasingly favouring cosmetic companies that implement ethical business methods (Cvrtak et al., 2024; Dodanwala et al., 2023). A shift towards ethical products in the cosmetics sector has led to the phrase cruelty-free products. In the context, cruelty-free is often referred to as the avoidance of testing cosmetic products or ingredients on animals (Dodanwala et al., 2023). However, the awareness of consumers about cruelty-free products and animal testing is different across countries and social groups due to differences in culture, legislation and consumer awareness about natural resources depletion and environment pollution in general.

Besides animal testing, the environmental issues in cosmetic industry can be summarized to problems with water consumption and sustainable water management; deforestation; sustainable agriculture and bio-sourced materials; microplastics; climate change, carbon footprint and greenhouse emissions; loss of biodiversity. Those problems arise and affect the environment during the whole process starting with raw materials and resources, through manufacturing, packaging and transportation, usage and waste disposal. In line with this, we can state that cosmetic industry affects the environment at the production and consumption stages. Cosmetic products are emitted into water ecosystems, where their environmental impact is related to bioactivity, toxicity, and bioaccumulation potential (Zdonek et al, 2024). The highlighted ethical issues are related with the ecological consequences of production processes, the carbon footprint of the industry, and the implications of sourcing raw materials process and its social and ecological impact. Hence, the environmental dimension of cosmetic industry's ethical issues provokes sustainability debates.

In this vein, there is a growing emphasis on avoiding ingredients that contribute to deforestation or the depletion of natural resources. As one of the major problems in the industry stands the palm oil. More than decade ago, companies begun to use oleochemicals derived from oils and fats in a move towards natural ingredients when trying to replace petrochemicals and petroleum oil-based formulations. Palm oil is attractive for the industry due to its relatively low cost and its flexibility. Nonetheless, advantage for it is that its production requires relatively low amounts of energy, fertilizer and pesticides. Also, palm oil can produce three to eight times more oil from a given land area than any other temperate or tropical oil crop. As a result, the demand has increased significantly and it exerts pressure for higher palm oil outputs to be used in soaps, shampoos, lipsticks, etc. Inevitably, production of palm oil in particular has come in for criticism for its impacts on the environment and local wildlife. This accordingly led to the need of bigger and bigger quantities of palm oil and to ensure it, new territories with trees were freed to secure vast spaces to plant the palm trees. Palm oil made with conventional production methods can lead to unchecked agricultural expansion that threatens forests and wildlife (WWF).

The result was substantial deforestation and landgrabs of jungles and hazard for biodiversity in certain parts of the world – Indonesia, Malaysia, Papua-New Guinea, Sumatra, Borneo. For instance, Sumatra has lost more than half of its forests in the last 40 years, primarily due to conversion for palm oil and pulp plantations (WWF). Besides deforestation, this process of securing new territories impacts the atmosphere due to high carbon emissions. Much of the trees are cut down and removed, and what remains is cleared by burning. During the burning of tropical forests, nearly 18% of greenhouse gas emissions are released, which significantly contributes to global climate change. Likewise, palm plantations have a detrimental effect on the local soil. When planting oil palms, a large amount of fertilizers and pesticides are used to ensure the rapid growth of

the trees. The high concentration of chemicals significantly damages the beneficial components of the soil. Palm oil production causes loss of biodiversity as it poses a serious habitat threats to animals inhabiting the tropical forests of Malaysia and Indonesia. The most endangered animals are the Bornean orangutan (*Pongo pygmaeus*), Sumatran elephant, Sumatran rhino, Sumatran tiger (all critically endangered), which depend on forest habitats cleared for the plant's cultivation (WWF). So, instead of being valuable route to sustainable development, palm oil is assumed as costly and detrimental damage to environment.

As an option to stop this excessive demand, the manufacturers have switched to other natural oils as substitutes, namely sunflower, rapeseed and coconut oils in soap bases and glycerine. But the shift of palm oil to one single other oil just displaces the problem and puts another ecosystem under pressure (Carmichael, 2011). Consequently, ethical business is one that is not contributing to ecological catastrophes, i.e. sustainable one. The journey towards sustainability puts obstacles, particularly in the formulation stage, where the choice of ingredients plays a crucial role in determining the product's environmental impact and people (Popescu et al., 2024).

To continue, the problems associated with palm oil include also the social impacts on local inhabitants and the question of palm oil's potential use in biofuels. In this regard, another key consideration for sourcing and manufacturing processes to be ethically sound is the fact that the rights and well-being of workers and communities involved should also be respected. In other words, fair trade practices should be observed.

Manufacturers have to think not only on the sourcing and manufacturing process, but also on the use and disposal of their products. Ethical issues in cosmetic industry concern products' packaging as well. The sustainability of a cosmetic product is significantly impacted by its packaging (Popescu et al., 2024). Microplastics from the packaging are falling into water resources and cannot be recycled or removed. Nanocosmetic products like facial cleanser, eyeliner, and toothpaste are also "rinsed off" into the water. The problem is that the conventional waste processing system has not been designed to handle pollution from cosmetic products. The structural complexity of these pollutions and their low concentrations make them undetectable, and hence difficult to remove with the current wastewater treatment methods (Zdonek et al, 2024). Therefore, these risks to the environment and humans definitely must be managed through regulation to make sure that those are not detrimental to environment. The cosmetic industry needs to balance the appeal of the product with environmental considerations.

3. Companies' ethical actions in cosmetic industry

Following in from the above analysis, we can suggest two groups of solutions for ethical cosmetic industry that are intertwined. The first one is reflecting differences between countries and is concerning cosmetics regulation and legislation regarding ingredients, usage, storage, packaging, etc. As pointed out, ethics is related with sustainability in great extent, so the second group is presenting solutions that must be considered exactly on this direction – sustainable sourcing, producing, packaging, consuming, disposal.

Undoubtedly, legislation is a key factor for ethics as far as it concerns labour conditions, work place hazards, safety of products, etc. The matter is that regulation for animal testing, health and safety issues, packages is not equally developed in different countries. In general, there is significant pressure from developed countries to less developed, including subcontractors on the supply chain, to apply stricter rules in order to governments to implement new more precise legislation for abovementioned areas.

For instance, cosmetic industry is strictly and highly regulated sector in EU. One of the important regulations refer the classification, labelling and packaging of substances and mixtures (CLP Regulation) and ensures that the hazards presented by chemicals are clearly communicated to workers and consumers in the European Union (Regulation, 1272/2008).

The REACH Regulation (1907/2006) on the registration, evaluation, authorisation and restriction of chemicals is the main EU law to protect human health and the environment from the risks that can be posed by chemicals. It has directives on the protection of human health and the environment, as well the use of animal testing. It also concerns the nanomaterials, used in the cosmetics (Regulation, 1907/2006). For instance, the presence of nanomaterials must be clearly indicated in the list of ingredients and followed by the word “nano” in brackets. The regulatory measures include nanolabels which ensures that consumers have adequate and accurate information that enables them to make an informed choice amidst the safety and health controversy associated with nanomaterials. Nanocosmetics can only be placed in the EU market after notification. The notification must be made by the responsible person to the authority via the cosmetic products notification portal (CPNP) and it is mandatory from July 2013. The responsible person has to upload various information and documents to the CPNP, such as the product name, category, EU Member State of placing the product on the market, physical state, packaging type, product formula, product labelling, product packaging photo, and other information. The notification indicates that it was placed in the market with the approval from the authority after it had passed the conclusive safety assessment requirement. The European Union Observatory for Nanomaterials (EUON, 2024) offers information about existing nanomaterials placed on the European Union’s market. It, among others, published a catalogue consisting of nanomaterials used in cosmetic products in the European Union. France is the first country to implement the mandatory registration of nanomaterials starting from 1 January 2013. As of 2024, only four other EU countries implement mandatory registration and those are Belgium, Denmark, Sweden, and Norway.

Animal testing on finished cosmetic products has been banned since September 2004, and testing on ingredients has been banned since March 2009. The cosmetic directive provides the regulatory framework for the phasing out of animal testing for cosmetics purposes. Specifically, it establishes a testing ban (prohibition to test finished cosmetic products and cosmetic ingredients on animals) and a marketing ban (prohibition to market finished cosmetic products and ingredients in the EU which were tested on animals). The same provisions are contained in the Cosmetics Regulation.

Regulation (1223/2009) on cosmetic products is the main legislation regulating the safety aspects of cosmetic products in the European Union. According to it, cosmetic products should be safe under normal or reasonably foreseeable conditions of use. In particular, a risk-benefit reasoning should not justify a risk to human health (Regulation 1223/2009). Manufacturers need to follow specific requirements in the preparation of a product safety report prior to placing a product on the market (European Commission). In accordance with the Regulation (1223/2009), a cosmetic product is to be made available on the Union market only where a list of ingredients is indicated on its packaging. Colourants, preservatives and UV-filters, including those that are nanomaterials, must be explicitly authorised. Products containing other nanomaterials not otherwise restricted by the cosmetics regulation will be the object of a full safety assessment at EU level if the Commission has concerns (European Commission).

Environmental issues are directed in Regulation (517/2014) on fluorinated greenhouse gases and it is important environmental legislation, relevant to the cosmetic sector as well.

Opposite to the EU, in other countries cosmetics regulation is limited or not existing at all. For instance, Pakistan is one of those countries where there are no regulations for cosmetic products and use of heavy metals and hazardous chemicals in the production of cosmetics is very common (Sakhawat, 2022). Some countries have adopted similar approach from the EU and develop legislation on nanocosmetics and cosmetics in general. EU Cosmetic Directive (Regulation 1223/2009) has been followed and adopted by ASEAN through ASEAN Cosmetic Directive and Malaysia as well.

After years of ban, there were attempts for re-introduction of animal testing for cosmetic products in Europe. Animal rights groups and cosmetics industry giants have joined forces to say no

to the new requirements from the European Chemicals Agency, seeking to make animal testing possible again in order to evaluate certain substances already used in the industry. The Body Shop and Dove, with PETA, Cruelty Free Europe, HSI, Eurogroup for Animals and ECEAE mobilize against these decisions by signing a "European Citizen's Initiative" petition (Gallon et al., 2021). The significance of these joint actions shows that the ban on animal testing as ethical practice is perceived as something normal on the continent. Unfortunately, in countries where animal testing is allowed, even companies that are avoiding it in Europe are supposed to perform it, such as L'Oreal and Nivea (Cvrtak et al., 2024). L'Oreal was among the first to approve tests without animals and exerts influence on the authorities in China so that they would keep this type of testing. The company is committed to beauty without animal testing and reconstructed human skin has been used for product testing for more than 40 years, on which the behaviour of cosmetic ingredients can be monitored (Cvrtak et al., 2024).

Besides adhering to mandatory regulation and legislation, companies in cosmetic industry can apply certification. Placing importance on health and safety standards, possible ethical act by manufacturers may include voluntary certification for halal cosmetics. Halal cosmetics certification reflects cultural needs of consumers in certain parts of the world and underscores that companies adhere to Islamic principles in cleanliness, safety, manufacturing processes, and production. Halal certification is provided by a certification agency and serves as a written confirmation for product's compliance with Islamic law meaning that the production process is conducted in a reasonable, ethical, hygienic, safe, and quality-oriented manner (Mahliza et al., 2024). The certificate contributes to consumer trust and confidence that are important pillars in ethical relations between consumer and producer.

Adoption of halal certificate in certain world parts demonstrates care and respect for local consumers and their religious beliefs, accordingly signs of no discrimination. For instance, Shiseido has just launched Online Beauty Consultation Service Using Sign Language while aiming to provide a personalized beauty experience for the hearing impaired and expand employment opportunities for people with disabilities (Shiseido, 2024). In general, ethical actions of cosmetic companies are associated with fundamental principles of guaranteeing employee's health and safety at work, fostering employee's development and engagement, diminishing discrimination and oppression, both to employees and consumers, developing safe and healthy products. In other words, companies' duty is to design, formulate and produce products that do the least harm to the environment and create cleaner and better quality products. Keeping fundamental human rights conventions, incl. animals' rights, it is just the first step of ethical companies. Consequently, ethics in the cosmetic industry is not merely a response to regulatory pressures but also a strategic move to environmental responsibility and accordingly sustainability.

In line with that, the second aspect of ethical actions of cosmetic companies is focused on innovations that foster sustainable development. Consumer awareness and demand on more safe, healthy products, and eco-friendly products have led to the promotion of green cosmetics, also referred to as clean, natural, organic cosmetics, or ecological. It is cosmetics prepared from natural ingredients, free of preservatives and animal testing, with no skin allergies and protection of environment and animal well-being (Sakhawat, 2022; Zdonek et al., 2024). Green cosmetics cover a broad array of personal care products, such as environmentally-friendly creams, make up, and beauty products. Those products' ingredients are natural and fruit-derived. Rose, jasmine, lavender, lemon, mint, and coconut are few natural scents used by green cosmetics manufacturers. Clean cosmetics are free of chemicals or non-natural admixtures and additions; made with no pesticides, synthetic chemicals, or tests on animals and they are associated with mild fragrance (Sakhawat, 2022). New concept is the vegan cosmetics that respects nature, people and animals. Moreover, vegan cosmetics do not contain ingredients of animal origin, such as wax, honey or milk (Cvrtak et al., 2024).

The challenges and ethical dilemmas with environmental pollution as result of cosmetic industry have forced manufacturers to search new paths to competitiveness aligned with sustainability in the direction of sustainably produced ingredients. Natural cosmetics reflects conservation efforts of natural resources and protecting biological diversity along the entire value chain. Companies are now declaring that great percentage of their ingredients in formulas will be biologically based, obtained from minerals or circular processes (L'Oreal, 2024). For instance, Robertet is growing organic oils (rose, lavender) or herbs in different parts in order to protect and restore nature in the supply chain (Robertet, 2024).

Addressing ingredient sustainability during the design phase is pivotal, as it sets the foundation for the environmental impact of the entire product lifecycle. A broad number of stakeholders have impact on the shift to sustainability and ethics in cosmetic industry. Important unit in the chain are the suppliers, especially in the case when companies do not source raw materials. Nowadays, it is extremely important in cosmetics to work and rely on transparent, loyal and environmentally-concerned suppliers, i.e. ethical ones. L'Occitane works directly with 130 French farmers and 10,000 pickers to build relationships based on trust and respect (L'Occitane, 2024). In this manner, organic cosmetics is also linked with improving the livelihoods of the producers and local communities, especially women on the supply chains of cosmetic companies. Estee Lauder Companies states that manufactures its products, working diligently to source responsibly and with attention to potential impacts on people and the environment (Estee Lauder Companies, 2024).

In accordance with ethics and environmental sustainability, possible criteria for green suppliers can be: risk of harmful elements, product pollution and pollution rate; resource consumption; ratio of green customers to total customers, commitment of green supply chain managers, use of environmentally friendly materials and technologies, environmental training of employees; clean technology usage; waste disposal; recycling rate, renewable and non-renewable energy use (Dabbaghi, 2022).

Producing while preserving natural resources relates to the abovementioned palm oil issues. In response to the pressing global call for sustainably produced palm oil, Roundtable on sustainable palm oil (RSPO) was formed in 2004 by founding members the World Wildlife Fund, the Malaysian Palm Oil Association (MPOA), Unilever, AAK, and Migros. Since then, RSPO have developed a set of environmental and social criteria that companies must comply with to produce RSPO Certified Sustainable Palm Oil (CSPO). These measures help minimise the negative impact of palm oil production on the local environment, wildlife and communities (RSPO). However, certified palm oil production is still only a small portion of the palm oil produced worldwide. As of 2022, only 20 percent of the total palm oil production area in Indonesia (one of the largest producers) in the world was planted with oil palm trees that have a sustainability certification. In other regions such as Latin America, however, the certified sustainable palm oil (CSPO) share grew and represented a third of regional palm oil supply that year (Statista, 2024).

Specific response to environmental protection and oceans' sustainability is pure cosmetics that aims to preserve the seas and ocean, i.e. blue beauty (Cvrtak et al., 2024). For example, companies like Naos adopts strategy for aquatic ecosystems, not just marine ecosystems (NAOS, 2024). Known for its commitment to bees and protection of their habitats, Guerlain respects biodiversity in similar manner. Other ethical actions applied by global leaders such as Beiersdorf, L'Oreal, Coty and Shiseido include sustainable water management focused on the preservation and protection of drinking water, as well reducing water consumption to a minimum and fight against climate change by reducing CO2 emissions and saving energy in the entire value chain.

In this respect, to keep those commitments and to develop safe and healthy products for the consumer, cosmetic companies should consider strong and safe packaging. For years, plastic has been used in the industry. Now, being one of the key factors for cosmetic industry's negative impact on environmental sustainability, companies should limit it in their production. Replacing artificial

packaging with cardboard boxes and paper packaging that consumers throw away as soon as they start using the product is not an option, as well. Recycling is one possible solution, such as compostable, returnable, and recyclable packaging or from biological sources. Not only cosmetics itself can be made with naturally sourced materials, but also its containers can be made with bio-sourced materials. New cosmetic case uses CJ Biomaterials' amorphous PHA technology in combination with polylactic acid (PLA) (CJ Biomaterials, 2022).

Outlining packaging issues, it is important to mention the Environmental and Social Impact Labelling by L'Oréal that provides consumers with clear and useful information. It includes a score on a scale from A to E, with an "A" product considered as "best in class" in terms of 14 planetary impact factors such as greenhouse gas emissions, water scarcity, ocean acidification or impact on biodiversity, measured at every stage of a product's life cycle (L'Oreal, 2024). Referencing recycling in cosmetics in Europe, the most common symbol is the "Green Dot" that is a trademark that shows membership of a specific recycling and recovery scheme to deal with the packaging waste of a company's products (Cosmetics Europe, 2024).

Besides replacing the existing packaging materials with sustainable alternatives, focal area for cosmetics is to reduce waste itself. Claims from companies suggests that it will be recycled or reused (L'Oreal, 2024). It implies that they are adopting the principles of circular economy and suggests to achieve zero waste. It means promoting such solutions as reduction, reuse, repair, and recycling. Besides that, the reduction of the volume, weight, packaging, and materials used in products can be an important step towards environmental protection. Therefore, they are involved in sourcing reusable containers and using recycled materials (Zdonek et al, 2024).

To achieve this, cosmetic companies should raise customer awareness of packaging recycling and reuse. Their marketing campaigns should focus on the impacts and include educational aspects of their activities to encourage consumers' contribution towards environment through sustainable consumption (Sakhawat, 2022). Customers in the cosmetic industry are susceptible to the marketing activities of the companies whose products they consume since they directly affect their organisms (Cvratak et al., 2024). Many consumers appreciate marketing campaigns that transparently and honestly communicate sustainability efforts, showing a shift towards more ethical consumerism. They prefer genuine sustainability claims over superficial greenwashing that builds customer trust and loyalty. Such preferences are evident in the area of animal testing and animal welfare and they influence decisions to purchase cruelty-free products (Dodanwala et al., 2023). And even some of the ethical actions are voluntary, cosmetic companies are under growing pressure to operate responsibly and sustainably. The trend reflects a broader shift in what society values in business, meaning ethical and environmental considerations are becoming crucial.

Conclusion

The cosmetic industry is grappling with various ethical issues that require a multidimensional approach. These problems can be viewed from different angles, such as the perspective of employees, consumers, partners in the supply chain, the sourcing of raw materials, and evaluating the sustainability of a product over its entire lifecycle.

Key considerations include using sustainable technologies, ethically sourced ingredients and formulations free from harmful chemicals. The result is focus on naturally derived components and accordingly plant-based, organic, and natural cosmetics. Packaging is also evolving towards recyclable, biodegradable, or recycled materials to reduce the environmental impact. Innovations respond to the various challenges in the cosmetic industry and offer new directions towards sustainable manner. Certain new technologies require careful treatment since there are divergent opinions regarding their safety and impact on human body and environment. With growing consumer awareness on sustainability and general ethical actions of the business, the cosmetic

industry strives to propose a more sustainable cosmetic product by changing production, packing, and waste disposal.

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