ECOLOGY AND TRENDS IN THE DEVELOPMENT OF COSMETIC BRANDS AND THEIR IMPACT ON FUTURE MAKEUP

Abstract. The article focuses on analyzing ecological trends in the development of cosmetic brands and their influence on the future of makeup. The research aims to examine the main directions in the development of the cosmetic industry, considering the increasing emphasis on sustainability and health. General scientific methods of cognition, such as analysis, synthesis, comparison, and forecasting, were used in the study. The research findings indicate that the natural cosmetics market is showing stable growth, reflecting the rising interest in health and environmental sustainability. In 2024, the global eco-cosmetics market is valued at 46.8 billion USD, with projections to reach 54.5 billion USD by 2027. The United States holds about 15% of this market due to the high demand for organic and eco-friendly products. This is supported by growing consumer awareness of the impact of chemical ingredients on health and the environment, driving a shift towards more natural and safer products. Key trends in the beauty industry for 2024 include several crucial directions. High-quality hygiene products are gaining more attention, particularly items that reduce environmental impact, such as menstrual cups, which help avoid 240,000 tons of solid waste annually in the US. Transparency in production is becoming critical: losses from counterfeit cosmetics in the EU amount to about 4.7 billion euros annually, emphasizing the need for product traceability. The liquid makeup market, valued at 10.1 billion USD in 2022, is expected to grow to 13.9 billion USD by 2028. There is also increasing demand for products that protect the skin from blue light, minimalist makeup items, and multifunctional cosmetics that combine several functions in one. The prospects for the development of the cosmetic industry are centered on innovations that enhance sustainability and product personalization. The practical significance of the research lies in identifying
the key factors influencing the eco-cosmetics market and the trends shaping the future of makeup.

**Keywords:** eco-cosmetics, market, trends, innovation, personalization.

**Problem statement.** The beauty industry, particularly the market for cosmetic products, continues to exhibit significant growth, reflecting the increasingly sophisticated and diverse demands of modern consumers. With the advancement of technology and the growing focus on personalized care, the cosmetics industry has become an essential part of the global economy. In recent years, the natural cosmetics market has stood out among other segments, responding to the increasing demand for products that are not only effective but also safe for health and the environment.

Sustainability and quality are becoming key priorities for both consumers and manufacturers. Growing awareness of harmful chemical ingredients in traditional cosmetics is driving the market toward safer, alternative solutions. Consequently, there is a noticeable shift towards producing products that adhere to the principles of sustainable development, from ingredients to packaging. Both established brands and new companies are increasingly investing in the research and development of organic and natural products to meet the expectations of eco-conscious consumers.

As society progresses, technological innovations continue to significantly impact the cosmetics market, shaping new trends. Artificial intelligence (AI), innovative ingredients, and the latest production technologies are being actively integrated into the creation of cosmetic products. These changes not only improve the quality and effectiveness of products but also enhance the level of personalization, providing tailored solutions for each consumer. Technologies that enhance formulations, create innovative packaging solutions, and ensure transparency in the production process are becoming increasingly important.

Despite these advancements, the cosmetics market continues to evolve, reflecting rapid shifts in consumer preferences and needs. Innovation remains a key driver in this development. New ideas and technologies are constantly emerging, altering the paradigm of how we perceive beauty and self-care. The integration of AI, the development of new active ingredients, and the growing emphasis on sustainability provide a foundation for the future growth of this sector. The cosmetics market is on the brink of a new era, where technology and ecological innovations will play a crucial role in shaping its future.

**Analysis of recent scientific research and publications.** The issue of the ecological aspects of the development of cosmetic brands and the impact of current trends on future makeup remains under-researched in the scientific literature. While there are numerous studies on specific technological innovations in cosmetology, comprehensive works that systematize the impact of these trends on ecology are

Expert literature, particularly articles in publications such as Cosmetics & Toiletries, Journal of Cosmetic Dermatology, and Pharmaceutical Industry Review, also addresses contemporary aspects of the topic, including trends in ecological sustainability and the impact of the latest technologies on the beauty industry.

Despite the sufficient number of publications on specific aspects of the topic, there is a noticeable lack of systematic material covering the impact of current trends in cosmetology on ecology. Therefore, it is important to continue analyzing and grouping information to better understand how innovations in the cosmetics field can align with ecological sustainability.

The article aims to showcase current trends in the development of cosmetic products and their prospects for future development.

Research results. The natural cosmetics market has shown steady growth in recent years, reflecting consumers' increasing focus on health, environmental sustainability, and sustainable production. Growing awareness of the harmful chemical ingredients in traditional cosmetics and the active promotion of green chemistry are driving the market towards safer and more natural products.

In the U.S. market, as well as globally, there is significant growth in the natural cosmetics sector. This growth is fueled by the expanding range of available products, rising eco-consciousness among consumers, and the growing interest in healthy lifestyles. Both established brands and new companies are investing in the production of natural and organic cosmetic products, making these options more accessible to a broader audience.
The global market for natural cosmetics, valued at approximately $46.8 billion in 2024, is showing stable growth, with projections to reach around $54.5 billion by 2027. The United States occupies a significant share of this market—about 15%—due to the increasing demand for eco-friendly and organic products among American consumers. This trend supports forecasts that indicate continued growth, especially considering the rising consumer awareness regarding health and sustainable development, which sustains the market's steady dynamics in the future.

Key trends in the beauty industry for 2024 include the following: high-quality hygiene products, demands for transparency from cosmetic brands, protection against blue light, rising demand for liquid makeup, a return to minimalist makeup, and the growing popularity of antibacterial hair care products [10].

High-quality hygiene products: hygiene products that include safe water, sanitation, and hygiene (WASH) are crucial for maintaining human health and well-being. Improving the quality of water supply and sanitation, such as regulated plumbing systems or connections to sewage systems with wastewater treatment, can dramatically reduce the incidence of diarrheal diseases [14]. Additionally, choosing products with less environmental impact is essential. For example, menstrual cups are considered a more eco-friendly option compared to traditional disposable items like sanitary pads and tampons, which generate 240,000 tons of solid waste annually in the U.S. alone [7].

Transparency demands from cosmetic brands: the demand for transparent and traceable cosmetic products is also reflected in market statistics. For instance, research cited by XJ Beauty [15] discusses significant annual losses in the EU due to counterfeit cosmetics, amounting to around 4.7 billion euros. This underscores the importance of transparency not only from ethical perspectives but also for
economic viability. The growth of eco-cosmetics has significantly influenced the rising demand for transparency among cosmetic brands. This shift is primarily driven by consumer awareness and their desire to use products that are not only effective but also environmentally responsible and ethically produced [13]. The cosmetic industry is also implementing technological solutions to enhance transparency and traceability. For example, serialization technology, such as QR codes and blockchain, is being increasingly used. These technologies allow consumers to track the origin of ingredients used in their products and verify brands' claims about sustainability and ethical sourcing [15].

Recent trends indicate that consumers are increasingly concerned about the ingredients used in their cosmetics, the sustainability of packaging, and the overall impact of products on the environment. In response to this, leading cosmetic companies like Henkel, L’Oréal, LVMH, Natura&Co, and Unilever are jointly developing a new system for assessing and rating environmental impact. This initiative aims to provide consumers with clear, transparent, and comparable information about the ecological impact of cosmetic products, covering their entire life cycle from formulation to packaging and use [3].

**Cosmetic products against blue light:** Blue light, also known as high-energy visible light (HEV), is a component of the visible light spectrum. The main sources of blue light include sunlight and artificial sources like computer screens, smartphones, tablets, and LED lighting. Research suggests that prolonged exposure to blue light can have negative effects on the skin, including accelerated aging, hyperpigmentation, inflammation, and oxidative stress [11].

Due to the growing awareness of the harm caused by blue light, the cosmetic industry has begun developing products that can protect the skin from its effects. Some of the latest and most effective ingredients used for blue light protection include:

- **BASF DN-Aura:** a natural active ingredient that reduces pigmentation spots by acting on miR-490-3p.
- **BASF Neurobiox:** this ingredient stimulates cell renewal and helps increase the thickness of the epidermis, which thins with age.
- **BASF Phytosoothe:** designed to protect and restore the physical and microbial barrier of the skin, this ingredient reduces inflammation and strengthens skin structure.
- **RAHN AG Celligent:** a combination of antioxidants from rice and rosemary that helps restore the skin’s biorhythm, reducing the negative effects of blue light.
- **RAHN AG Myramaze:** activates the skin's sensory receptors, promotes relaxation, and improves the user's mood even at low concentrations.
- **RAHN AG Proteolea:** manages cellular recycling and contains an anti-HEV formula, providing a six-year rejuvenating effect in four weeks.
• Alban Muller Cytokalmine ER: reduces the overall mechanism of inflammatory response and oxidative stress, making it an effective solution for protecting the skin from blue light damage.

• Silab Oxygeskin: combats skin damage caused by blue light exposure and helps maintain a healthy skin appearance [14].

Blue light is a significant factor contributing to premature skin aging, pigmentation, and inflammation. Modern cosmetic products containing specialized ingredients developed to protect the skin from the harmful effects of blue light offer effective solutions for maintaining skin health and beauty amid the increasing influence of electronic devices in our daily lives [2].

Liquid makeup. The global market for liquid makeup continues to exhibit robust growth. In 2022, it was valued at $10,146.29 million and is projected to reach $13,919.56 million by 2028, with a compound annual growth rate (CAGR) of 5.41% during the forecast period. The market is segmented into several key categories, including foundations, eye makeup, concealers, lip products, and other items. These categories cater to diverse consumer needs, offering a wide range of products for various market segments [6].

Major manufacturers in the global liquid makeup market include industry giants such as L’Oreal Paris, KIKO MILANO, The Avon Company, HUDA BEAUTY, Dior, FENTY BEAUTY, Shiseido Co., Ltd., Estée Lauder Inc., and Benefit Cosmetics LLC. These companies hold leading positions due to their strong brands, innovative products, and effective marketing strategies.

Current trends in the liquid makeup market emphasize inclusivity and expanding shade ranges to meet the needs of diverse consumer groups. Additionally, there is increasing focus on the safety and environmental sustainability of products, in line with the growing consumer demand for natural and eco-friendly cosmetics. The integration of technologies and the use of artificial intelligence for personalized cosmetic solutions are also key aspects of the market’s development.

Minimalist makeup. The trend towards minimalist beauty is gaining significant traction in today’s world. As elaborate 7-9-step skincare routines become less common, consumers increasingly opt for simple yet effective products. This approach resonates particularly with Generation Z, which actively invests in self-gifting, purchasing items for themselves about 51 times a year and spending an average of $828 annually. Nearly 37% of young people spend these funds on skincare products, cosmetics, and jewelry [9].

Despite its popularity, creating minimalist cosmetic products remains challenging. Manufacturers must combine ingredients and invest in innovative production technologies and extensive research to ensure product safety and efficacy. This challenge is faced by many large cosmetic companies. According to a study by Kline, giants like Johnson & Johnson, Unilever, and Estée Lauder have achieved only one-third of their projected sales in response to the growing demand for minimalist cosmetics.
However, new brands that quickly adapt to market changes have significantly increased their sales. Companies like Kopari, Youth to the People, and Beauty Counter have shown triple sales growth in recent years. This distribution of market opportunities between large and small brands suggests that success is attainable for those who can swiftly respond to emerging trends.

**Antibacterial hair care products.** The market for antibacterial hair care products is rapidly evolving. Changes in consumer needs, driven by increased attention to health and hygiene, have spurred the development of new products that protect hair and scalp from harmful bacteria. Growing concerns about the potential transfer of pathogenic microorganisms through hair have led to a rise in demand for products that offer antimicrobial protection. For example, Farouk Systems has developed the BioSilk line of antibacterial products that meet modern hair care needs while removing bacteria and maintaining scalp hydration [6].

The increasing demand for antibacterial products is linked to awareness of the importance of scalp health. Bacteria that accumulate on the scalp can cause problems such as dermatitis or inflammation. Thus, new products are being developed with a focus on maintaining a healthy balance of the scalp’s microbiome. Developing effective antibacterial hair care products requires innovative approaches. The use of safe and effective antimicrobial components is crucial for manufacturers. For instance, Farouk Systems collaborates with scientific experts to create products that not only provide antimicrobial protection but also support the health and hydration of the hair [1].

**Multifunctional cosmetics.** The beauty industry is swiftly adapting to changing consumer preferences, and one of the most prominent trends in 2023 is the rising demand for multifunctional cosmetics. Products that can perform multiple tasks simultaneously are becoming increasingly popular. This shift is largely driven by the trend of "skinimalism", which highlights the benefits of a simplified skincare routine.

The pandemic has been a key factor in driving this trend. With more time spent at home and a growing interest in simple habits, there is a demand for products that offer multiple benefits without needing numerous separate items. This not only simplifies self-care but also aligns with a more sustainable and minimalist approach to skincare and makeup.

Products combining 2, 3, or even 4 active ingredients in one item, such as moisturizers and serums, are highly sought after. Another example is tinted sunscreens, which combine UV protection with a light tint for a natural skin appearance. Skincare and makeup hybrids are also gaining popularity, blending skincare benefits with the aesthetic appeal of makeup.

A notable example of this trend is the Enlighten Illuminating Serum from Neostrata. This product exemplifies the essence of multifunctional cosmetics: it not only combats pigmentation but also helps to even out skin tone. It includes
ingredients like NEOGLUCOSAMINE, which acts as a gentle exfoliant, and 4% niacinamide (vitamin B3), B-resorcinol, and licorice extract, making this serum an effective multi-purpose solution [12].

Table 1 summarizes the prospects of the above technologies.

<table>
<thead>
<tr>
<th>Trend</th>
<th>Future Prospects</th>
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<tbody>
<tr>
<td>High-quality hygiene products</td>
<td>Transition to more eco-friendly hygiene products, adoption of new technologies to ensure quality water supply and sanitation. Expected reduction in environmental impact and improvement in human health through the implementation of sustainable practices.</td>
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<tr>
<td>Transparency from cosmetic brands</td>
<td>Increased transparency and accountability among brands. Expected growth in consumer trust in products, reduction in economic losses due to counterfeits, and enhanced ethical production. The implementation of technologies to verify sustainability and eco-friendliness of products will become standard in the market.</td>
</tr>
<tr>
<td>Cosmetic products against blue light</td>
<td>Rising demand for products that protect against blue light due to increased screen time. Continued development of innovative ingredients to improve skin protection and combat aging signs caused by blue light.</td>
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<tr>
<td>Liquid makeup</td>
<td>Continued growth in the liquid makeup market with a focus on inclusivity and sustainability. Integration of cutting-edge technologies, such as artificial intelligence, for product personalization will be crucial for competitiveness. Expected rise in demand for products that meet individual consumer needs while reducing environmental impact.</td>
</tr>
<tr>
<td>Minimalist makeup</td>
<td>Expansion of the market for minimalist products that combine multiple functions in one. Innovative technologies and quick adaptation to market changes will be key success factors for brands. Increased popularity among consumers who value simplicity and effectiveness in self-care.</td>
</tr>
<tr>
<td>Antibacterial hair care products</td>
<td>Continued growth in demand for antibacterial products due to increased focus on hygiene and health. Development of new products that provide antimicrobial protection while supporting scalp health and hydration. Innovative approaches in product manufacturing will be essential to meet consumer needs.</td>
</tr>
<tr>
<td>Multifunctional cosmetics</td>
<td>The trend towards multifunctional products will grow due to the benefits of simplifying skincare routines and enhancing sustainability. Increased availability of such products in the market and development of new formulas combining multiple functions to meet the needs of modern consumers. The pandemic has amplified this trend, creating new opportunities for manufacturers.</td>
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Conclusions. The cosmetics market continues to exhibit dynamic growth, setting new standards and quality requirements for products. The United States remains a leader in this sector, both in terms of production volumes and innovation. American companies are actively integrating the latest technologies and responding
to the growing consumer demand for more eco-friendly and transparent products. This leadership position is not only due to the vast domestic market but also to their ability to influence global trends and set new standards in the international cosmetics industry.

Key trends shaping the development of the modern cosmetics industry include high-quality hygiene products, transparency in production and product traceability, skin protection against blue light, the development of the liquid makeup market, the popularity of minimalist makeup, rising demand for antibacterial hair care products, and multifunctional cosmetics. Each of these trends reflects specific changes in consumer preferences and responds to new challenges of the times, particularly those related to environmental and social aspects.

The future prospects of the cosmetics industry are closely tied to further ecological advancements and innovations in production. Increasing consumer environmental awareness compels brands to focus on the sustainability of their products. It is expected that, in the future, cosmetic companies will increasingly aim to reduce their environmental impact by using eco-friendly ingredients, minimalist packaging, and enhancing transparency in their production processes. This approach will not only contribute to the conservation of natural resources but also allow companies to meet the rising consumer demand for environmentally sustainable and ethically produced products.

References:


