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Consumption Of Green Cosmetics Helps Protect The Environment Of Vietnamese Consumers

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Abstract:
Green cosmetics – eco-friendly and healthy beauty products – are playing an important role in shaping global sustainable consumption trends. This study reviews the rationale and empirical evidence related to the intention to buy green cosmetics. Specifically, the study conducted data analysis on 239 Vietnamese consumers using Smart PLS 4.1 software. The results show that environmental awareness has a positive impact on the consumption attitude of green cosmetics of Vietnamese consumers.
Keywords: *Green cosmetics, environmental protection, green cosmetics consumption attitude.*

1. INTRODUCTION

Most skin care and makeup products such as cleansers, exfoliators, toothpastes, eyeshadows... With the use of massage, cleaning, emulsification and physical exfoliation, they all contain microbeads. In other words, they are microscopic plastic spheres, about 1mm in diameter. These plastic particles have the function of polishing the surface and cleansing the skin, but scientists are concerned about their impact on the environment. The percentage of microplastics in products varies, ranging from less than 1% to more than 90% of the product weight. According to research by scientists from the University of Colorado and the University of California Berkeley (USA), currently smoke from vehicles is not as dangerous as air pollution caused by beauty cosmetics.

Scientists have found that cosmetics are also a source of pollution. They identified a compound called decamethylcyclopentasiloxan or D5 siloxane, which contains silicon, which is different from other organic compounds. Through research from scientific literature, researchers found that pure siloxane D5 is produced mainly as an additive for deodorants and hair care products. On average, people use products that contain a total of about 100–200 mg of D5 per day, which is roughly the weight of half an aspirin pill. A small portion of these products end up down the drain with the water when we shower. However, much of this compound remains in our bodies and ends up in the atmosphere.

D5 levels are highest in the morning, when most people take a shower, use cosmetics and then leave the house to go to work. Scientists have also observed large amounts of benzene emissions in the morning, when people drive to work. During the morning rush hour, D5 and benzene emissions are almost equivalent. In other words, at this time of day, the amount of organic matter evaporated from our body is comparable to the amount of organic matter emitted by motor vehicles. The results of this study also support the findings of a study conducted by Brian McDonald's team in Los Angeles (USA), which indicates that cosmetics emit volatile organic compounds (VOCs) at levels comparable to emissions emitted from gasoline and diesel.

Therefore, the first way to protect the environment is to reuse skincare cosmetics. There are many times when we buy an inappropriate cleanser that causes irritated or dry skin. But don't rush to throw that cleanser bottle in the trash, reuse it as a way to protect the environment in the form of a product to clean your makeup tools. Makeup brushes, makeup foams, chalk,... all need to be cleaned periodically to remove bacteria, dirt and toxins formed from old makeup residue. Cleansers with a high pH can replace specialized makeup removers. Besides, cosmetic bottles can also be recycled and used for many different purposes after being used up. For

example, you can use bottles from used cosmetics to extract shampoo, shower gel, cleanser, makeup remover, makeup remover... to take with you every time you travel.

Finally, organic cosmetics – green cosmetics are a way for people to be both beautiful and protect the environment. The use of cosmetics from organic substances will help users avoid the negative effects of chemicals (preservatives, colorants, etc.) which are very commonly used in beauty products. Therefore, it will limit the spread of harmful substances into the environment.

This study evaluates the factors influencing the intention to consume green cosmetics in order to protect the environment of Vietnamese consumers. The composition of the article in addition to the introduction includes an overview of the study, research methods, research results, and conclusions.

2. LITERATURE REVIEW

2.1. Definition of green cosmetics

In the context of the climate crisis and the increase in awareness of responsible consumption, green cosmetics are becoming a fast-growing and promising segment. Globally, more than 60% of consumers are willing to pay more for sustainably produced cosmetics, and about 65% check the eco-label before purchasing. Green brands also receive higher levels of trust (55–80%). However, there is a lack of quantitative models to measure the impact of green cosmetics consumption behavior on environmental outcomes in developing countries. There is a lack of research on the cohesion between green behavior and cultural/local factors in Vietnam. Current studies mainly describe intent, not analyzing repetitive consumer behavior, loyalty, and actual environmental efficiency. There have not been many studies analyzing the factors affecting the consumption behavior of green cosmetics**.** Measure the impact of this consumption behavior on the protection of the individual and community environment.

According to COSMOS standards and studies by Chatzidakis et al. (2022), green cosmetics are products that: Have ingredients from natural/biological origin, have environmentally friendly production processes (low emissions, save resources), have friendly packaging (recycled, reused or biodegradable) and are not tested on animals and ensure a transparent supply chain white.

2.2. Planned Behavior Theory (TPB)

Ajzen (1991) emphasizes three factors that influence intentional behavior: attitudes, subjective norms, and perceptions that control behavior. Many recent studies have expanded the TPB model to include ethical factors, environmental values, and brand trust (Lee et al., 2023).

Consumer Perceptions and Attitudes: According to the TPB theory, Millennials and Gen Z consumers who are highly educated in environmental awareness and health have a higher level of positive evaluation of organic and green personal care products

A survey in Ho Chi Minh City (318 students) using the Value-Belief-Norm (VBN) model showed that hedonic value promotes green beliefs (pro-environmental belief), thereby creating the choice to consume green cosmetics, while altruistic value does not have a clear linear impact on that belief

According to the Planned Behavior Theory (TPB) and the Cognitive – Attitude – Behavior Model (CAB/A-B-C), cognitive beliefs are the fundamental factors that influence attitudes, which in turn lead to behavior. When consumers are aware of the negative impact of conventional cosmetics (e.g., microplastic pollution, non-biodegradable plastic packaging, toxic chemicals, etc.), they tend to: Form a positive attitude towards green products, be environmentally friendly, increase empathy and environmental responsibility, and prioritize more sustainable consumption despite higher costs.

2.3. Environmental awareness and consumption attitude of green cosmetics

Environmental Awareness reflects an individual's level of understanding, concern, and responsibility for environmental issues, such as climate change, plastic pollution, and the ecological impact of consumer products. In the context that the cosmetics industry is causing a large amount of packaging waste and microplastics, environmental awareness is considered a factor that motivates consumers to switch to green cosmetics products.

According to the Theory of Planned Behavior (TPB) and the ABC (Attitude–Behavior–Context) model, cognition serves as a premise for forming a positive attitude towards environmentally friendly behavior. When consumers are well aware of the negative consequences of conventional cosmetics, they tend to form favorable attitudes towards alternative products that are safer for health and the environment, such as organic, vegan, non-animal tested cosmetics, etc and have recyclable or reusable packaging.

Many studies have confirmed this link, such as: Nguyen et al. (2023) pointed out that environmental awareness is a strong predictor of positive attitudes towards green cosmetics in developing countries. Ali et al. (2021) demonstrate that awareness of environmental risks directly affects the formation of a positive attitude and a higher willingness to pay for eco-friendly cosmetics. Based on the theory and results of previous empirical studies, the study proposes the following hypothesis:

H1: Environmental awareness has a positive impact on the attitude of consuming green cosmetics to protect the environment.

3. RESEARCH METHODS

3.1. Background and sample of the study

According to Grand View Research (2024), the green cosmetics market will reach more than 21 billion USD, growing by 8.8%/year. In Southeast Asia, Vietnam stands out with a high percentage of Gen Z consumers prioritizing environmentally friendly products.

The study was conducted with a sample of 239 Vietnamese consumers who have used or are tending to use green cosmetics, including products with natural, organic ingredients, not tested on animals, with recycled or environmentally friendly packaging.

The criteria for choosing a model are as follows:

- Consumers 18 years of age or older;
- Have an awareness or interest in environmental factors when choosing cosmetics;
- Living in major cities of Vietnam (Ho Chi Minh City). Ho Chi Minh City, Hanoi, Da Nang, Can Tho, Hue);
- Have used at least one green cosmetic product within the past 12 months.

The sample selection method used is purposive convenience sampling, in which the surveyor is asked test questions in advance to ensure that it is consistent with the research objectives. The survey questionnaire is released through both face-to-face (at natural cosmetics stores and green product fairs) and online (via Google Forms, social networks such as Facebook and Zalo).

Table 1: Summary table of statistics describing the study sample

Demographic characteristics	**Frequency (n=239)**	**Rate** (%)
Gender		
-Female	187	78.2%
-South	52	21.8%
Age		
- 18–25	88	36.8%
- 26–35	97	40.6%
- Over 35	54	22.6%
Education		
- University or higher	194	81.2%
- Under-university	45	18.8%
Monthly income level		
- < 10 million VND	127	53.1%

Demographic characteristics	Frequency (n=239)	Rate (%)
- 10–20 million VND	81	33.9%
- > 20 million VND	31	13.0%

Although the study sample was not randomly selected, the focus on consumers who had real-world experiences with green cosmetics allowed the study to delve into the analysis of actual attitudes and behaviors, in line with the goal of testing hypotheses of environmental awareness and sustainable consumer behavior. The sample also reflects the main demographic that is dominating the green cosmetics market – that is, young, highly educated, middle-income women – well in developed urban areas.

3.2. Research model

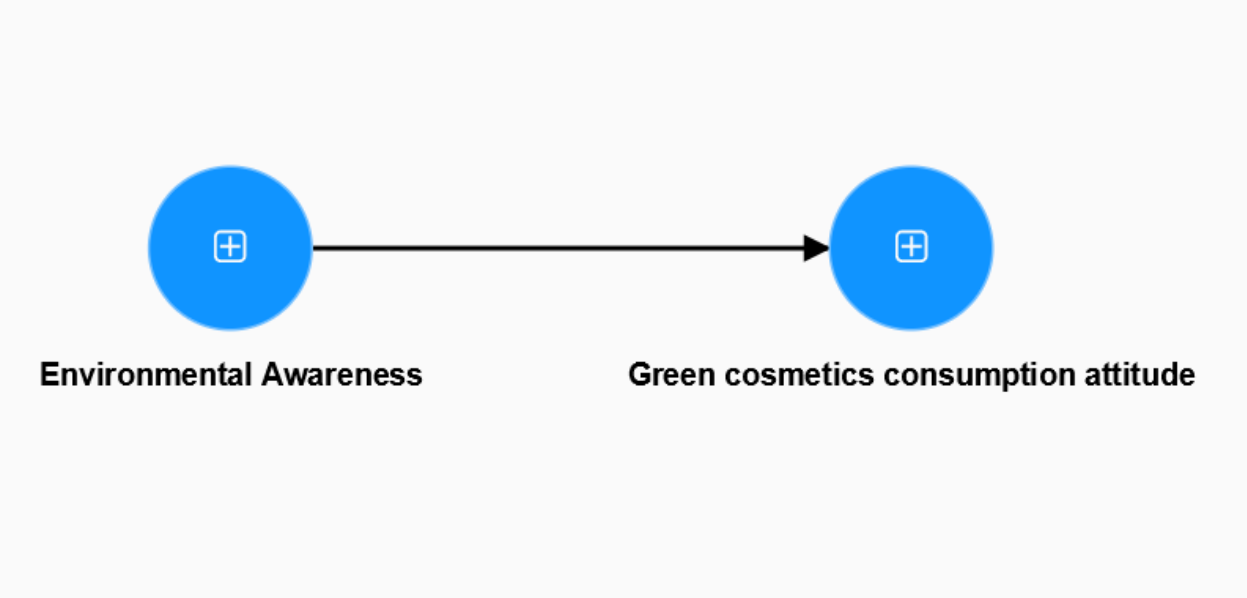

Figure 1: Model research

In which:

- Environmental awareness is defined as the level of consumer understanding and concern about the environmental impact of cosmetic products.
- The consumption attitude of green cosmetics is a positive evaluation of consumers for the selection and use of cosmetics with natural, safe, and environmentally friendly ingredients.

Table 2: Variables and scale origins

Get lost	Items	Source
Environmental Awareness (EA)	EA1: I am aware that conventional cosmetics can harm the environment. EA2: I think that the use of green cosmetics contributes to the protection of the ecosystem. EA3: I believe that consuming green cosmetics can reduce the amount of plastic waste.	Yadav & Pathak (2016), Ali et al. (2021)
Attitude (ATT)	ATT1: I feel green cosmetics are eco-friendly. ATT2: I have a good sympathy for green cosmetic brands.	Ajzen (1991), Nguyen et al. (2023)

ATT3: I think using green cosmetics is the right thing to do.

4. RESEARCH RESULTS

The results of the evaluation of the measurement model show that the variables are satisfied in terms of reliability, value and are not multi-collinear. Next, the author evaluates the structural model for the following results:

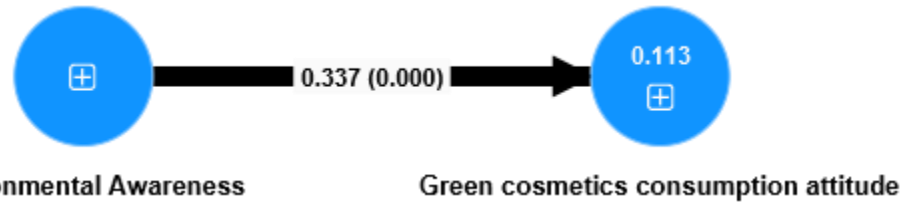

Figure 2: Results of hypothesis testing

After performing linear structure model (SEM) analysis with survey data from 239 consumers in Vietnam, the results of testing the H1 hypothesis are as follows:

Table 3: Hypothesis test results

Relationship	β Coefficient (Path Coefficient)	P-value	Conclude
Environmental Awareness → Attitude to Green Cosmetics	0.337	< 0.001	Accept H1

With the impact coefficient (β = 0.337) indicating a medium-strong impact level, implying that as environmental awareness increases, positive attitudes towards green cosmetics also increase correspondingly. A P value of < 0.001 demonstrates a statistically significant relationship at a 99% confidence level. This result confirms that environmental awareness is one of the fundamental factors influencing the formation of a positive attitude towards green cosmetics. Consumers have a high level of understanding and interest in environmental issues such as chemical pollution, plastic waste from cosmetics, impacts on marine ecology, etc. tend to appreciate the ethical and safety value of green cosmetics as well as support brands that are committed to protecting the environment. From there, consumers, ready to change their consumption attitudes, switch from traditional products to environmentally friendly options. This is consistent with previous studies: Ali et al. (2021) suggest that high levels of environmental awareness increase favorable attitudes towards organic products. Nguyen et al. (2023) point out that in Vietnam, consumers with a clear awareness of cosmetic pollution are likely to develop a stronger attitude towards green products.

5. CONCLUSION

This study focuses on exploring the role of environmental awareness in forming a positive attitude towards green cosmetics consumption, thereby contributing to promoting sustainable consumption behavior to protect the environment. Based on the analysis of survey data with the linear structure modeling (SEM) method, the results confirmed that environmental awareness has a positive and statistically significant effect on the consumption attitude of green cosmetics. The H1 hypothesis is accepted with a significant impact coefficient, affirming the importance of cognitive factors in sustainable consumption behavior models.

The findings show that consumers are becoming more aware of environmental issues related to cosmetics, such as chemical pollution, microplastics, and non-compostable packaging. As awareness increases, consumers tend to rate green cosmetic products more positively – including organic, animal-free products,

with recycled or biodegradable packaging. This affirms the essential role of environmental education, social responsibility communication, and green marketing strategies in changing attitudes and reorienting consumer behavior.

From an academic perspective, this research contributes to the theoretical treasure trove of sustainable consumer behavior, especially in the field of cosmetics – an industry with a strong growth rate in parallel with significant impacts on the environment. At the same time, the research model provides an empirical basis for further studies on the relationship between cognition – attitude – behavior in the context of green consumption in developing markets such as Vietnam.

From a practical perspective, the research results provide important implications for cosmetic manufacturers and brand managers: Investing in programs to raise public awareness and communicate green values not only contributes to building a responsible brand image, but also creates a strong motivation to promote the cosmetics market to develop in a more sustainable direction.

In the future, studies may extend the model to other mediating and regulating variables such as sense of personal responsibility, social norms, or perceived benefits, and apply it to other consumer industries to identify universal factors influencing environmentally friendly consumer behavior.

This review studies establish the foundation for future in-depth surveys and empirical testing. Acquisition intention is a key indicator of long-term acceptance of green cosmetics. Businesses need to focus on: Improving product quality and perceived value. Increase transparency and authenticity in marketing. Develop a convenient distribution chain and reasonable prices.

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