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FEMALE CONSUMER INSIGHTS ON GREEN COSMETICS: EVALUATING ENVIRONMENTAL IMPACT, SAFETY, INGREDIENTS, MARKETING, SATISFACTION, AND ETHICAL STANDARDS

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Abstract

A recent survey conducted among 500 Indian women has revealed a strong preference for organic cosmetics, driven by a variety of factors including environmental and ethical considerations, health and safety concerns, quality and trust, as well as awareness and promotion efforts. The survey, utilizing convenience sampling, highlighted that respondents primarily fell within the age ranges of 25 to 50, with a significant portion being married and highly educated. Most respondents were graduates or post-graduates, and a majority were either business owners or employed in the private sector, with diverse income levels.

Environmental and ethical reasons emerged as a key factor, as many women are increasingly conscious of the impact their choices have on the planet. Organic cosmetics, which avoid harmful chemicals and promote sustainable practices, align well with their values. Health and safety reasons also played a crucial role, with respondents expressing concerns about the potential long-term effects of synthetic ingredients found in conventional beauty products. Organic cosmetics, perceived as safer and more natural, are thus preferred for their gentle and non-toxic formulations.

Quality and trust were significant drivers, with women favoring brands that are transparent about their ingredients and manufacturing processes. Organic cosmetic brands often emphasize their commitment to high standards, fostering trust among consumers. Additionally, increased awareness and effective promotion of organic products have contributed to their popularity. Many women reported being influenced by marketing campaigns that highlight the benefits of organic cosmetics, further supported by positive reviews and recommendations. The rise in awareness, fueled by social media and celebrity endorsements, has particularly influenced

women, leading to a booming market for organic cosmetics that align with their values.
The study applied the Partial Least Squares (PLS) method using Smart PLS 3.2.7 to evaluate the structural equation model, focusing on measuring and evaluating the model. The research examined four constructs: Environmental and Ethical reasons, Health and Safety reasons, Quality and Trust reasons, and Awareness and Promotion reasons. The study categorized female consumers into four groups: Group 1 focused on environmental and ethical reasons, Group 2 prioritized health and safety, Group 3 emphasized quality and brand trust, and Group 4 concentrated on brand awareness and promotion. Overall, the survey underscores a growing trend among Indian women toward organic cosmetics, motivated by a combination of environmental consciousness, health considerations, quality assurance, and effective promotional strategies. Consumers are rejecting conventional cosmetics due to harmful chemicals and ethical issues like animal testing.

Keywords: Organic cosmetics, Environmental and ethical reasons, Health and safety, Quality and trust, Awareness and Promotion

Introduction

Cosmetics in India often carry symbolic meanings beyond mere adornment. They can signify cultural identity, marital status, prosperity, and devotion in various religious contexts. India's cosmetics market has been expanding rapidly, driven by increasing disposable incomes, urbanization, and changing lifestyles. This growth also indicates a major shift towards urban living and definitely has boosted demand for cosmetics, as urban Indians tend to be more exposed to global beauty trends. Traditionally, cosmetics were used primarily by women. However, attitudes are evolving, with men increasingly embracing grooming products. The influence of Bollywood, social media, and advertising has significantly shaped beauty standards and consumption patterns. India's diversity presents challenges for cosmetic companies in terms of catering to varied skin tones and preferences. Ethical concerns such as animal testing and the environmental impact of packaging have emerged as increasingly prominent issues among consumers. A growing trend towards innovation, with brands developing products tailored to Indian skin types and climates are also witnessed escalating. Ancient traditions like Ayurveda emphasize the use of natural ingredients such as herbs, oils, and minerals for skincare and beauty. These practices have been passed down through generations and are still widely practiced today. Cosmetics are integral to Indian festivals and celebrations. For instance, during weddings, festivals like Diwali, and religious ceremonies, women often adorn themselves with intricate makeup, henna designs (mehndi), and traditional jewelry to enhance their beauty and auspiciousness.With globalization and urbanization, there's a blend of traditional practices with modern beauty trends. Urban Indians increasingly use a variety of cosmetic products influenced by global fashion and media trends.

The evolution of cosmetics in India is a fascinating journey that spans centuries, blending ancient traditions with modern influences. During the medieval period, India saw an influx of Persian and Islamic influences, which contributed to the use of perfumes, attars (traditional fragrances), and more intricate beauty rituals. The Mughal era introduced intricate styles of makeup and beauty practices among royalty and nobility, influencing aesthetics and luxury beauty products. With the arrival of European colonizers, Indian society saw the introduction

of Western-style cosmetics and beauty products. This era marked the beginning of commercialization and modernization of the cosmetics industry in India. Post-independence, India saw the growth of domestic cosmetic brands catering to diverse consumer needs and preferences. Companies like Lakmé, Ayur Herbals, and Himalaya Herbals became prominent, offering products tailored to Indian skin tones and preferences. Globalization brought international beauty trends and brands to India, influencing consumer choices and expanding the market for cosmetics. Urbanization led to increased demand for skincare, makeup, and grooming products among urban Indians. There has been a resurgence of interest in natural and Ayurvedic cosmetics in recent years, driven by a preference for organic and sustainable products. Brands are blending traditional knowledge with modern scientific advancements to meet consumer demand. The advent of digital platforms and e-commerce has transformed the cosmetics industry in India, making products more accessible and allowing consumers to explore a wide range of options from both domestic and international brands. The evolution of cosmetics in India reflects a blend of ancient traditions, colonial influences, modern innovations, and global trends. This dynamic journey highlights the resilience and adaptability of India's beauty traditions in the face of changing times. But today due to rise in Ecommerce platforms, allowing brands to gather extensive data on consumer preferences and purchasing behavior. This data enables them to create personalized recommendations and customized products that cater to individual needs. Some brands offer personalized skincare and cosmetic formulations based on factors such as skin type, concerns, climate, and lifestyle. This customization ensures that consumers receive products that address their specific needs effectively. Ecommerce platforms often integrate virtual try-on tools and quizzes that help consumers find products suited to their preferences. This interactive approach enhances the shopping experience and increases consumer satisfaction. Ecommerce platforms often integrate virtual try-on tools and quizzes that help consumers find products suited to their preferences. This interactive approach enhances the shopping experience and increases consumer satisfaction.

Green cosmetics, also known as natural cosmetics or organic cosmetics refer to products that are formulated using ingredients derived from natural and organic sources. These products are typically free from synthetic chemicals, artificial fragrances, preservatives, and other potentially harmful substances commonly found in conventional cosmetics. Green cosmetics use natural ingredients such as plant extracts, essential oils, herbs, and minerals. These ingredients are often chosen for their therapeutic and nourishing properties. Many green cosmetics carry organic certifications, indicating that the ingredients have been grown without synthetic pesticides or fertilizers, and processed without synthetic chemicals. They are formulated without potentially harmful chemicals such as parabens, phthalates, sulfates, synthetic dyes, and petroleum-derived ingredients. Green cosmetics often prioritize sustainability in their production processes, including eco-friendly packaging and sustainable sourcing of ingredients. They are typically not tested on animals, aligning with ethical values against animal testing.

Green cosmetics aim to provide effective skincare and beauty benefits while minimizing the risk of adverse reactions associated with synthetic chemicals. Transparency is the key brands often emphasize transparency by clearly labeling their products with ingredient lists and certifications, allowing consumers to make informed choices. By using natural and organic

ingredients, green cosmetics aim to reduce environmental impact throughout their lifecycle, from sourcing to disposal. The Indian cosmetics market was valued at approximately $11.16 billion in 2020 and is projected to grow at a CAGR of around 9% from 2021 to 2026. A survey conducted by Nielsen reported that over 70% of Indian consumers are willing to pay a premium for products that are perceived as healthier or safer, which includes natural and organic cosmetics. (Source: Nielsen India). Major challenges for green cosmetics to bloom more in India especially in Tier 2 & Tier 3 cities include affordability, education, and awareness among consumers, particularly in rural areas. However, these challenges also present opportunities for brands to innovate, educate, and expand their reach in the burgeoning green cosmetics market. Challenges include affordability, education, and awareness among consumers, particularly in rural areas. However, these challenges also present opportunities for brands to innovate, educate, and expand their reach in the burgeoning green cosmetics market.

India's regulatory framework for cosmetics is governed by the Drugs and Cosmetics Act, which includes guidelines for product safety, labeling, and ingredients. Specific regulations related to organic and natural cosmetics include adherence to standards set by certification bodies like India Organic and international standards like COSMOS. The E-commerce exclusive platform like organic harvest caters all the brands alluring chemical free beauty brands. They house brands like Forrest Essentials, Soul tree, Kama Ayurveda, Pahadi Local, Khadi Naturals, Biotique, Disguise Cosmetics, Mama Earth, The Body Shop Ras Luxury oils, Neemli Naturals, The tribe concepts and more. The list is adding on each year on year basis indicating a strong up gradation in the list of such organic green cosmetic products. These brands exemplify India's growing commitment to organic cosmetics, blending traditional herbal knowledge with modern scientific advancements to cater to the increasing demand for natural, sustainable, and ethical beauty products.

Pure Earth, a prominent brand recognized for its commitment to sustainability and natural skincare, has been honored with the prestigious Times of India Award. This accolade underscores Pure Earth's dedication to excellence in the field of eco-friendly cosmetics, emphasizing their innovative approach and high standards in promoting natural beauty products. The award from Times of India not only acknowledges Pure Earth's achievements but also highlights their significant impact on the cosmetics industry, particularly in promoting environmentally friendly practices and products. This recognition further solidifies Pure Earth's position as a leader in the green cosmetics market, inspiring consumers and industry peers alike.

In 2023, India stood as the fourth largest revenue generator in the global beauty and personal care market. Despite the dominance of global giants like Unilever, Procter & Gamble, and L'Oréal in the cosmetics industry worldwide, India's market witnesses' robust competition from domestic brands. Emerging organic brands are gaining traction, addressing gaps left by international counterparts that struggled to cater to the specific requirements of Indian skin types. This trend has opened avenues for local companies such as Mama Earth, Khadi Essentials, Plum, and SoulTree to effectively promote their homemade cosmetics and personal care products. The COVID-19 pandemic accelerated the online discovery and sales of a new wave of cosmetic products as supermarkets, department stores, hypermarkets, and salons faced closures. Like China, India saw a significant shift in consumer behavior towards online channels, particularly benefiting direct-to-consumer (DTC) brands. Nykaa, founded by Falguni

Nayar, emerged as a notable success story in this sector, establishing itself as one of the leading companies in India's online beauty and personal care market.

Literature Review

The beauty industry is increasingly focused on sustainability to meet consumer demand and regulatory requirements. The life cycle of a cosmetic product encompasses several stages, each with opportunities to enhance sustainability. Exploring the concept of sustainability throughout the entire life cycle of cosmetic products, from design and development to the post-use phase, contributes to the global movement towards sustainability (Martins, A. M., & Marto, J. M., 2023). Several factors influencing consumer behavior toward green products like social norms, natural environmental orientation, the company's perceived green image, green product characteristics, perceived risks and inconvenience of purchasing green products, perceived benefits of buying green products, institutional trust, socio demographic characteristics, and consumer confidence (Barbu, A., Catană, Ș.-A., Deselnicu, D. C., Cioca, L.-I., &Ioanid, A. 2022). Companies introducing sustainable offerings encounter a frustrating paradox: while most consumers express positive attitudes toward eco-friendly products and services, their purchasing behavior often does not align. Despite claiming they want sustainable products, consumers frequently do not buy them (Katherine White, David J. Hardisty, Rishad Habib, 2019). There is a lack of government definitions and regulations for green cosmetics in the United States, the European Union, and Brazil, and discrepancies exist among the guidelines used by green cosmetic certification systems (Camilla Custoias Vila FRANCA1, Helene Mariko UENO, 2020). A well maintained structural condition is required for economic growth to be compatible with environmental sustainability and transition. Millennial are the best consumer group as they are up for brands with purpose and sustainability, making such brands lead two times higher than their traditional counter parts (Katherine White, David J. Hardisty, Rishad Habib, 2019). Most of the consumers although favor a lot these brands but since it charges slightly more, becomes tough for them to continue and this become a major challenge for these organic, eco-friendly and greener brands. Strategies trying to narrow down the "intention-action gap" turns out to be mandate for these brands to survive and sustain in long run. Sometimes using simple techniques through social media where in the customers are clued-up regarding other customers preferring eco-friendly products, gave 65 % spike to the annual sales of these target customers buying atleast one sustainable purchase (Katherine White, David J. Hardisty, Rishad Habib, 2019). Social media influencers turning out to be a proper advocate could be a great savior for the brands and especially when the audiences visualize them to be indulged in the same behavior as mentioned in the ad or campaign. A proper management of the structural conditions needed for economic growth to align with environmental sustainability and the management of the transition to a new economic paradigm is the need of the hour (Diego A. Vazquez-Brust, Joseph Sarkis, 2012). The International Resource Panel's report explores the concept of decoupling economic growth and human well-being from environmental impacts and resource use, highlighting the potential for innovation and rethinking economic growth to achieve more resource-efficient economies, providing a foundation for future research on sustainable development (The United Nations Environment Programme; Nairobi, Kenya, 2011). Environmental conservation is a global priority, underscored by a survey across nine developed nations revealing that 50% of respondents

actively purchase green products, with 24% indicating a willingness to pay premium prices for sustainable alternatives (BoE, MOEA 2020). The United Nations Environment Program has estimated that the market for green products doubles annually, highlighting a rising trend in consumer interest towards purchasing environmentally friendly products. However, in the majority of studies, it is argued that consumers' decisions to buy green products are not primarily motivated by the products' environmental attributes (The United Nations Environment Programme; Nairobi, Kenya, 2011). Consumers while purchasing green products tend to have an internal survey within themselves, accessing their pre gathered knowledge and experiences. Further also acquire knowledge from the external sources and here the act of collectivism is crucial determinant for their motives behind the purchases (Leonidou, C.N.L.; Leonidas, C.; Kvasova, O, 2010). A green brand image, green advertisement or green awareness doesn't lead to purchase intensions among the consumers, it is their ecological knowledge and their mere concern towards their surrounding environment leads to a greener purchase (Rahmi, D. Y., Rozalia, Y., Chan, D. N., Anira, Q., & Lita, R. P., 2017).

A sustainable lifestyle, among the men for cosmetic is driven by global consumer awareness, the green revolution, and various governmental regulations, is linked to the consumption of green cosmetics. Like other industries, the beauty and personal care sector is adopting green product concepts (Ali, S.; Usama Javed, H.M.; Ali, W.; Zahid, H., 2022). Factors associated with green cosmetics purchase intention and Green cosmetic purchase behavior has predominance of one's attitude being a subjective norm and other factors like behavioral control, marketing mix, consumer's consciousness, concerns and values also brand attributes, self efficacy and perceived barriers, understand these said factors well would definitely help marketers to deal better strategies and push the product well in the market (Limbu, Y.B.; Pham, L.; Nguyen, T.T.T., 2022).Infact several studies have confirmed that attitude (theory of planned behavior) positively influences intension and behavior are the prime predictor of GCPI (Green Cosmetice Purchase Intension) and GCPB (Green Cosmetic Purchase Behavior). Specifically hedonic and utilitarian attitude formation was visible also cannabis based skin cosmetics and attitude towards cruelty –free cosmetics were preferred (Limbu, Y.B.; Pham, L.; Nguyen, T.T.T., 2022). Ethically motivated personal norm affects green purchase behavior (Quoquab, F.; Jaini, A.; Mohammad, J., 2020). Others approval and disapproval means a social norm definitely influences green cosmetic purchases (Munerah, S.; Koay, K.Y.; Thambiah, S.2021). The price of organic cosmetics does moderate the relationship between attitude and intention, playing perceived behavioral control (Kim, H.Y.; Chung, J.E. 2011). Further it is also found that a perceived behavioral control is a significant predicator of green cosmetic purchase intension (GCPI) and behavior (Delistavrou, A.; Papaioannou, E.; Assimakopoulos, C. 2022). Within the marketing mix, product sensory appeal/sensorial expectations and price sensitivity/consciousness significantly predicted GCPI (Moslehpour, M.; Chaiyapruk, P.; Faez, S.; Wong, W.-K. 2021).

What consumer values plays a vital influence on green cosmetic purchases. The values like equivocal (Suphasomboon, T.; Vassanadumrongdee, S., 2022), motives, functional benefits, their lifestyles, environmental concerns, health consciousness, self – image and self appearance concerns and their emotions influences the customers while purchasing greener cosmetic products , (Magano, J.et al. 2022, & Pudaruth, S., 2015).

Branding attributes like brand trust certifications, brand awareness, brand loyalty, green brand

equity and most importantly and brand's corporate social responsibility becomes the most associative attribute towards green cosmentic purchase intensions and behavior (Lavuri, R.et al., 2022, Lee, E.J. et al., 2020 & Lee, Y.-H. et al., 2019). Rising consumer confidence in other term the self-efficacy of a consumer is found major in female counterparts in a study attempted on Vietnamese consumers (Limbu, Y.B.; Pham, L.; Nguyen, T.T.T., 2022). Past purchase, experience, knowledge about green cosmetic products and also environmental knowledge influences ones purchase intensions for greener cosmetic products (Sharma, M.; Trivedi, P.; Deka, J., 2021). It is also witnessed that factors like system trust, trust in government and mandatory legal bodies rules and regulation does influence and affects green cosmetics buying behavior (Kumar et al., 2021). While target the audiences through commercial advertisement, green cosmetic buying if well portrayed as a norm and emphasized on laying a social pressure a consumer perception towards its buying could be altered (Munerah, S.; Koay, K.Y.; Thambiah, S.2021). More often storytelling if could be derived towards consumer confidence in green cosmetic buying, it would become an influential campaign.

Research Methodology

3.1 Measurement

This research adapted items from different authors to measure the constructs of the research model. The researchers measured environmental and ethical reasons by adapting the items of Nora Amberg and Csaba Fogarassy [2019], Nágela Bianca do Prado, Gustavo Hermínio Salati Marcondes de Moraes, Revista de Gestão [2020], and Justine Pillai and Rathis Jayabalan [2020]. The items are: I prefer Green Cosmetic because it reduces environmental issues, I prefer Green Cosmetic because it is safe to the environment, I prefer Green Cosmetic because it is composed of natural ingredients, I prefer Green Cosmetic because it is derived from nature, I prefer Green Cosmetic because I wanted to make a healthy contribution to the environment, I am satisfied with the use of Green Cosmetics because of absence of Animal Testing on them. Health and safety reasons were measured by adapting the items from the study of Dr. K. VijayaVenkateswari, and A. ManoJana Ranjani [2022], Parul Oberoi,and Prerna Oberoi [2018]. The items are: I prefer Green Cosmetic because it gives good results to my skin, I prefer Green Cosmetic because it is safe for my skin, I prefer Green Cosmetic because I love to stay healthy, I prefer Green Cosmetic because it satisfies my need of healthy living, I prefer Green Cosmetics because I have the awareness regarding the details of product being safe, I prefer Green Cosmetic because I am satisfied with its usage.Quality and Trust Reasons were measured by adapting the items from the study done by Silvia Cachero-Martínez [2020], Shakeel, Sabahat and Karim, Emadul [2019]. The items are: I prefer Green Cosmetic because of good quality even if it has high on price.I prefer Green Cosmetic because of the authentic labelling on the product packaging which gives me the feeling of trust.I prefer Green Cosmetic because I know they are the right product for me.I prefer Green Cosmetic because of reliable pricing. prefer Green Cosmetic because it Points to higher status.Awareness and Promotion Reasons were measured by adapting the items from the study done by Parul Oberoi,and Prerna Oberoi [2018], Shakeel, Sabahat and Karim, Emadul [2019], and Silvia Cachero-Martínez [2020]. The items are, I prefer Green Cosmetic because of the awareness created by the informative campaigns.I prefer Green Cosmetic consumption because of increased technical research efforts.I prefer Green Cosmetic because of reliable government regulations on product

safety.I prefer Green Cosmetic because of its systematic promotion techniques.I prefer Green Cosmetic because of the effective information provided by the ads.I prefer to purchase more of Green Cosmetic because it gives me the highest level of satisfaction.

All these items of the constructs were measured using a 5-point Likert scale ranging from 1= strongly disagree to 5= strongly agree. For this, the questionnaire was pre-tested and then the question wordings were changed to best reflect insight towards organic cosmetics. The Cronbach's alpha values of the variables were above 0.80 which was above the threshold of 0.70 (Sekaran, 2009).

3.2 Participants and Procedure

A total of 500 respondents participated in the survey. Convenience sampling was adopted for the study. 18.4% of respondents belonged to the age group of 25-30, 26.8% of respondents belonged to the age group of 31-35, 34.8% of respondents belonged to the 36-40 age group, 15.2% of respondents belonged to 41-45 age group and 4.8% of respondents belonged to 46-50 age group.

The survey was conducted only on women respondents. 12.4% of respondents were single, 82% of respondents were married, 2.4% of respondents were single parents, 1.6%of respondents were divorced, and 1.6% of respondents were widowed.

55.6% of respondents were graduates, 43.6%of the respondents were post-graduates, and 0.8% of respondents were dual post-graduates.

0.8%of respondents were students, 58.8% of respondents had their own business, 38.0% of respondents were working in the private sector and 2.4% of the respondents worked in government sector.

18.8% of respondents earned 5-7 LPA, 53.6% of respondents earned 7-9 LPA, 21.2% of respondents earned between 9-11 LPA and 6.4% of respondents earned between 11-13 LPA.

4 Data Analysis and Results

Using Smart PLS version 3.2.7, the researcher applied the partial least square (PLS) method of structural equation modeling. Two processes are involved in evaluating the structural equation model based on PLS: (i) measuring the model and (ii) evaluating the route or structural model (Henseler, Ringle, & Sinkovics, 2009). The various measurement and structural model criteria were covered in the section that followed.

4.1 Measurement Model

The constructs of this research study (Figure 1) include Environmental and Ethical reasons, Health and Safety reasons, Quality and Trust reasons, and Awareness and Promotion reasons. Table 1 represents the results of the measurement model. All of these constructs were conceptualized as low-order constructs.

Figure 1: Proposed Research Model

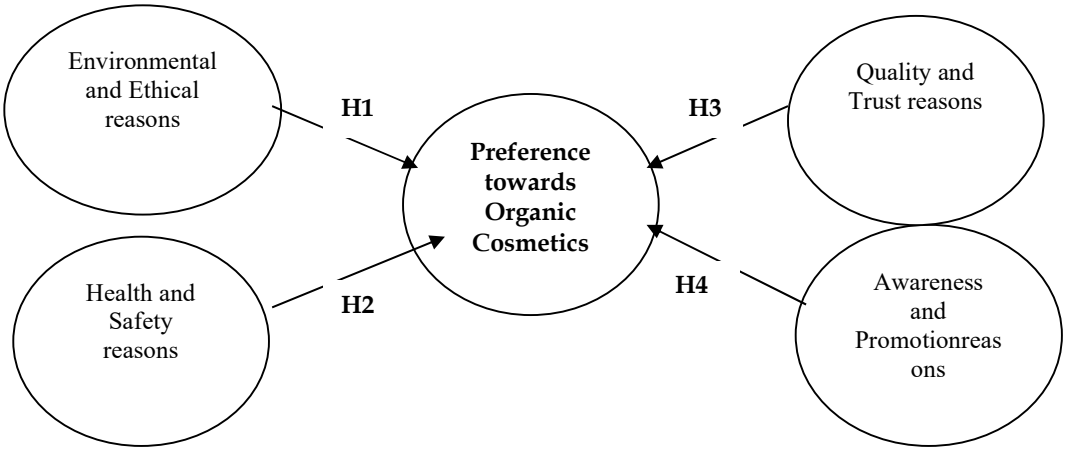

Table 1: Measurement Model Results

Constructs	Items	Loadings	CR	AVE
Environmental and Ethical reasons	EER1	0.887	0.942	0.732
	EER2	0.874		
	EER3	0.75		
	EER4	0.88		
	EER5	0.865		
	EER6	0.869		
Health and Safety reasons	HSR1	0.712	0.94	0.72
	HSR2	0.876		
	HSR3	0.82		
	HSR4	0.899		
	HSR5	0.877		
	HSR6	0.88		
Quality and Trust reasons	QTR1	0.612	0.831	0.554
	QTR2	0.816		
	QTR3	0.713		
	QTR4	0.817		
	QTR5	0.816		
Awareness and Promotion reasons	AAPR1	0.835	0.912	0.775
	AAPR2	0.893		
	AAPR3	0.91		
	AAPR4	0.894		
	AAPR5	0.918		
	AAPR6	0.835		

The items of the construct are loaded with values that are above the required threshold level of 0.4 as suggested by Hair Jr, Hult, Ringle, and Sarstedt (2017). For reliability of Structural Equation Modeling composite reliability (CR) criteria is used (Hair Jr et al., 2017). The reliability of the constructs is achieved since the CR values are above 0.7 (Environmental and

Ethical reasons = 0.942, Health and Safety reasons = 0.831, Quality and Trust reasons = 0.791, Awareness and Promotion reasons = 0.912, which are above the cut-off level of reliability (Hair Jr et al., 2017; Henseler et al., 2009). For convergence validity of the measurement model, average variance extracted (AVE) was calculated which required thecut-off value equal to or above 0.5 (Henseler et al., 2009).

The AVE values are 0.732 for Environmental and Ethical reasons, 0.720 for Environmental and Ethical reasons, 0.554 for Quality and Trust reasons, and 0.775 for Awareness and Promotion reasons which indicate all the values fulfil the requirement of convergent validity. Lastly, for discriminant validity, researchers suggest following the Fornell and Larcker (1981) criteria and cross-loadings (Hair Jr et al., 2017; Henseler et al., 2009). According to Table 2, diagonal values (square root of AVE) is higher thanoff-diagonal (correlations) values which means that the

discriminant validity of the model is achieved.

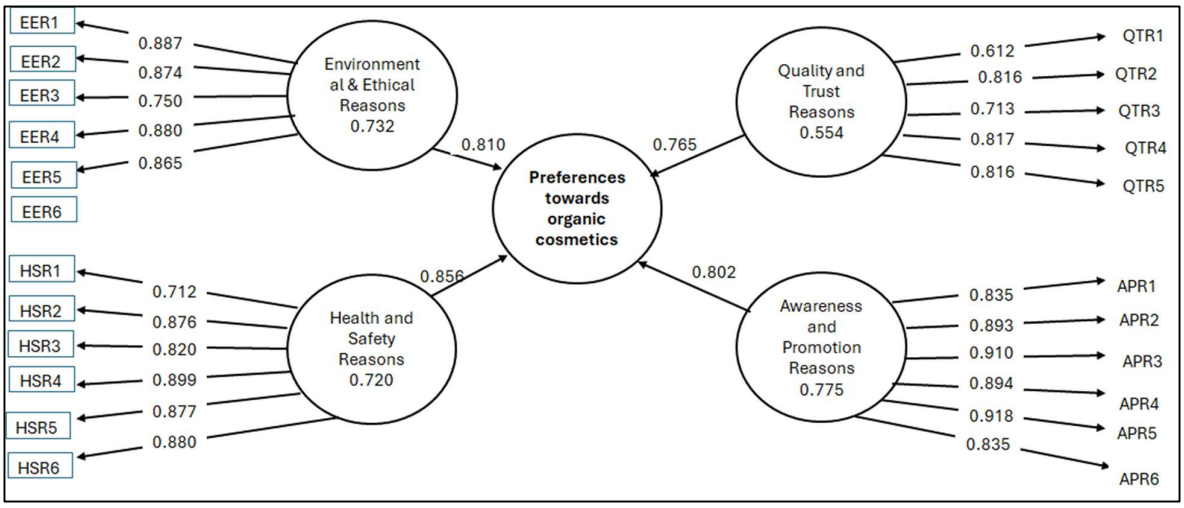

Table 2: Fornell and Larker Discriminant Validity

Constructs	Environmental and Ethical reasons	Health and Safety reasons	Quality and Trust reasons	Awareness and Promotion reasons
Environmental and Ethical reasons	0.86			
Health and Safety reasons	0.64	0.91		
Quality and Trust reasons	0.77	0.64	0.88	
Awareness and Promotion reasons	0.85	0.84	0.8	0.85

4.2 Structural Model

R2 value, which means the variance explained by the exogenous constructs, of the structural model is 84 percent that is Health and Safety reasons and Awareness and Promotion reasons explain 84 percent of the variance of preference towards organic cosmetics. Similarly, Quality and Trust reasons with health and safety reasons explain 64 percent respectively. To find the significance of individual paths e.g. hypothesized relationship t-statistics and p-values were calculated using a bootstrapping technique.

Table 3: Result of Path Model

	Beta	Standard Deviation	T Statistics	P Values	Decision
Environmental and Ethical reasons -> Preferences towards Organic Cosmetics	0.81	0.05	18.18	0.011	Supported
Health and Safety reasons -> Preferences towards Organic Cosmetics	0.77	0.06	16.34	0.021	Supported
Quality and Trust reasons -> Preferences towards Organic Cosmetics	0.07	0.08	0.85	0.041	Supported
Awareness and Promotion reasons -> Preferences towards Organic Cosmetics	0.02	0.07	13.16	0.034	Supported

The results of the structural model analysis are shown in Table 3. It is seen that the effect of Environmental and Ethical reasons has a positive and significant relationship with a preference towards organic cosmetics since $\beta=0.81$ and $p = 0.011$. This indicates that H1 is accepted. Similar results are also evident for the other 3 path relationships i.e. health and safety reasons, Quality and trust reasons, and Awareness and Promotion reasons have a significant relationship with a preference towards organic cosmetics since $\beta=0.77$ and $p = 0.021$, $\beta=0.07$ and $p = 0.041$ and $\beta=0.02$ and $p = 0.034$ respectively

4.3 Factor groups:

Group 1 consists of the following statements and hence we can term this group of respondents as concerned about "Environmental and Ethical Reasons"

1. I prefer green cosmetics because it reduces environmental issues.
2. I prefer green cosmetics because it is safe for the environment.
3. I prefer green cosmetics because it is composed of natural ingredients.
4. I prefer green cosmetics because it is derived from nature.
5. I prefer green cosmetics because I want to make a healthy contribution to the environment.

6. I am satisfied with the use of green cosmetics because of the absence of Animal Testing on them

Female consumers are increasingly choosing organic cosmetics due to environmental and ethical concerns. These products often avoid harmful chemicals, promoting healthier ecosystems and reducing pollution. Additionally, organic cosmetics are typically cruelty-free and ethically sourced, aligning with values of animal welfare and fair labour practices, enhancing their appeal to conscientious buyers.

Group 2 consists of the following statements and hence we can term this group of respondents as concerned about "Health and Safety Reasons"

1. I prefer green cosmetics because it gives good results to my skin.
2. I prefer green cosmetics because it is safe for my skin.
3. I prefer green cosmetics because I love to stay healthy.
4. I prefer green cosmetics because it satisfies my need for healthy living.
5. I prefer green cosmetics because I have an awareness regarding the details of product being safe.
6. I prefer green cosmetics because I am satisfied with their usage.

Female consumers opt for organic cosmetics primarily for health and safety reasons. These products are free from synthetic chemicals and harmful additives, reducing the risk of skin irritation and long-term health issues. Additionally, organic ingredients are often gentler and more nourishing, promoting overall skin health and well-being.

Group 3consists of the following statements and hence we can term this group of respondents as concerned about "Quality and Trust Reasons"

1. I prefer Green Cosmetic because of its good quality even if it has a high price.
2. I prefer Green Cosmetic because of the authentic labeling on the product packaging which gives me the feeling of trust.
3. I prefer green cosmetics because I know they are the right product for me.
4. I prefer green cosmetics because of reliable pricing.
5. I prefer greencosmetics because it points to a higher status.

Female consumers choose organic cosmetics due to their superior quality and trustworthiness. Organic products often feature high-quality, natural ingredients that provide better results. Moreover, transparency in sourcing and production processes fosters trust, as consumers feel confident, that they are using safe, effective, and ethically produced beauty products.

Group 4 consists of the following statements and hence we can term this group of respondents as concerned about "Awareness and Promotion Reasons"

1. I prefer Green Cosmetic because of the awareness created by the informative campaigns.
2. I prefer Green Cosmetic consumption because of increased technical research efforts.
3. I prefer Green Cosmetic because of reliable government regulations on product safety.
4. I prefer Green Cosmetic because of its systematic promotion techniques.
5. I prefer Green Cosmetic because of the effective information provided by the ads.
6. I prefer to purchase more of Green Cosmetic because it gives me the highest level of satisfaction.

Female consumers are increasingly opting for organic cosmetics due to heightened awareness and effective promotion. Growing knowledge about the benefits of natural ingredients and the

environmental impact of conventional products drives this shift. Influential marketing campaigns and endorsements by trusted figures further boost the appeal of organic beauty products.

5. Discussion and Conclusion

In recent years, India has seen a notable shift towards organic cosmetics, driven by a combination of environmental, ethical, health and quality considerations. Eco-conscious consumers are increasingly rejecting conventional cosmetics that are loaded with synthetic chemicals, which contribute to pollution and ecological destruction. Ethical concerns around animal testing and exploitation of natural resources are also central as consumers seek products that align with their values of sustainability and ethical practices.Health and safety are paramount in this evolution. Many conventional cosmetics contain harmful chemicals such as parabens, phthalates and sulphates, which can cause skin irritation, allergies, and long-term health problems. Organic cosmetics, made from natural ingredients, are considered a safer alternative, reducing the risk of side effects and promoting overall skin health.The quality of organic cosmetic products is another important factor. These products often contain higher concentrations of beneficial natural ingredients such as essential oils, plant extracts, and vitamins, which enhance their effectiveness. This perceived superior quality promotes greater consumer trust and satisfaction.Trust in organic cosmetic companies is further enhanced by transparency and ethical business practices. Companies that prioritize sustainable sourcing, eco-friendly packaging, and fair-trade practices are more highly valued.Awareness of the benefits of organic products is growing rapidly, fuelled by social media, influencers, and awareness campaigns. This growing awareness, combined with the visible endorsement of organic cosmetics by celebrities and influencers, has a particular impact on women in India. As a result, there is a thriving market for organic cosmetics, with women increasingly supporting and choosing products that align with their health, environmental, and ethical values.

References

1. White K., Hardisty D., Habib R. Harvard Business Review–The Elusive Green Consumer. 2019. [(accessed on 6 October 2022)]. Available online: https://hbr.org/2019/07/the-elusive-green-consumer
2. Darnall N., Ponting C., Vazquez-Brust D. Whameehy Consumers Buy Green. In: Vazquez-Brust D., Sarkis J., editors. *Green Growth: Managing the Transition to a Sustainable Economy.* Springer Science + Business Media; Dordrecht, The Netherlands: 2012. pp. 287–308. [Google Scholar]
3. The United Nations Environment Programme . *Decoupling Natural Resource Use and Environmental Impacts from Economic Growth.* The United Nations Environment Programme; Nairobi, Kenya: 2011. [Google Scholar]
4. Chen C.-C., Chen C.-W., Tung Y.-C. Exploring the Consumer Behavior of Intention to Purchase Green Products in Belt and Road Countries: An Empirical Analysis. *Sustainability.* 2018;**10**:854. doi: 10.3390/su10030854. [CrossRef] [Google Scholar]

5. Bureau of Energy, Ministry of Economic Affairs. 2020. 'Energy Statistics Handbook 2020'. ISSN 1726-374. Available at 109 (moeaboe.gov.tw) (accessed September 30, 2021).
6. UNEP. *Decoupling Natural Resource Use and Environmental Impacts from Economic Growth*; United Nations Environment Programme: Nairobi, Kenya, 2011.
7. Leonidou, C.N.L.; Leonidas, C.; Kvasova, O. Antecedents and outcomes of consumer environmentally friendly attitudes and behavior. *J. Mark. Manag.* **2010**, *26*, 1319–1344
8. Rahmi D.Y., Rozalia Y., Chan D.N., Anira Q., Lita R.P. Green Brand Image Relation Model, Green Awareness, Green Advertisement, and Ecological Knowledge as Competitive Advantage in Improving Green Purchase Intention and Green Purchase Behavior on Creative Industry Products. *J. Econ. Bus. Account. Ventur.* 2017;**20**:177–186. doi: 10.14414/jebav.v20i2.1126. [CrossRef] [Google Scholar]
9. Ali, S.; Usama Javed, H.M.; Ali, W.; Zahid, H. Decoding men's behavioral responses toward green cosmetics: An investigation based on the belief decomposition approach. *J. Environ. Plan. Manag.* **2022**, 1–28.
10. Limbu, Y.B.; Pham, L.; Nguyen, T.T.T. Predictors of Green Cosmetics Purchase Intentions among Young Female Consumers in Vietnam. *Sustainability* **2022**, *14*, 12599.
11. Quoquab, F.; Jaini, A.; Mohammad, J. Does it matter who exhibits more green purchase behavior of cosmetic products in Asian culture? A multi-group analysis approach. Int. J. Environ. Res. Public Health 2020, 17, 5258
12. Munerah, S.; Koay, K.Y.; Thambiah, S. Factors influencing non-green consumers' purchase intention: A partial least squares structural equation modelling (PLS-SEM) approach. J. Clean. Prod. 2021, 280, 124192.
13. Kim, H.Y.; Chung, J.E. Consumer purchase intention for organic personal care products. J. Consum. Mark. 2011, 18, 40–47
14. Delistavrou, A.; Papaioannou, E.; Assimakopoulos, C. Consumers' decision to purchase online ecological personal care products: A moderated TPB model. Int. J. Bus. Sci. Appl. Manag. 2022, 17, 34–47.
15. Moslehpour, M.; Chaiyapruk, P.; Faez, S.; Wong, W.-K. Generation Y's Sustainable Purchasing Intention of Green Personal Care Products. Sustainability 2021, 13, 13385.
16. Magano, J.; Au-Yong-Oliveira, M.; Ferreira, B.; Leite, Â. A Cross-Sectional Study on Ethical Buyer Behavior towards Cruelty-Free Cosmetics: What Consequences for Female Leadership Practices? Sustainability 2022, 14, 7786.
17. Pudaruth, S.; Juwaheer, T.D.; Seewoo, Y.D. Gender-based differences in understanding the purchasing patterns of eco-friendly cosmetics and beauty care products in Mauritius: A study of female customers. Soc. Responsib. J. 2015, 11, 179–198.
18. Suphasomboon, T.; Vassanadumrongdee, S. Toward sustainable consumption of green cosmetics and personal care products: The role of perceived value and ethical concern. Sustain. Prod. Consum. 2022
19. Lavuri, R.; Jabbour, C.J.C.; Grebinevych, O.; Roubaud, D. Green factors stimulating the purchase intention of innovative luxury organic beauty products: Implications for sustainable development. J. Environ. Manag. 2022, 301,

20. Lee, E.J.; Bae, J.; Kim, K.H. The effect of sustainable certification reputation on consumer behavior in the fashion industry: Focusing on the mechanism of congruence. J. Glob. Fash. Mark. 2020, 11, 137–153.
21. Lee, Y.-H.; Chen, S.-L. Effect of green attributes transparency on wta for green cosmetics: Mediating effects of CSR and green brand concepts. Sustainability 2019
22. Sharma, M.; Trivedi, P.; Deka, J. A paradigm shift in consumer behaviour towards green cosmetics: An empirical study. Int. J. Green Econ. 2021, 15, 1–19
23. Khan, S.; Salim, A. Saudi females' buying behavior of green cosmetics: A pertinent motivational aspect. J. Mark. Commun. 2021, 27, 594–606.
24. Kumar, S.; Talwar, S.; Krishnan, S.; Kaur, P.; Dhir, A. Purchasing natural personal care products in the era of fake news? The moderation effect of brand trust. J. Retail. Consum. Serv. 2021, 63, 102668.