

Driving Green Beauty: Understanding Determinants of Male Consumers' Purchase Intention in a Developing Country

Azhar Uddin¹, Mazhar Ali² and Shumaila Kashif³

<https://doi.org/10.62345/jads.2026.15.3.20>

Abstract

Consumer environmental consciousness is driving a shift towards eco-friendly consumption. Understanding the attitude of male consumers in this shift is of paramount importance, but receives little consideration. Hence, this research aims to assess the factors that affect male consumers' purchase intentions of green cosmetics. Building on the theoretical foundations of the Theory of Planned Behaviour, it focuses on the key drivers such as perceived environmental benefits, price sensitivity, product effectiveness, subjective norms, and purchase convenience. The data were collected through a cross-sectional survey of male consumers in a large city, using a purposive sampling technique. The analysis is conducted using SmartPLS to assess reliability, validity, and model fit. Findings suggest that significant determinants of green cosmetics purchase intentions are consumer attitude and perceived behavioural control. Positive attitudes toward product efficacy and environmental benefits are strong motivators to purchase, along with social determinants such as subjective norms that reinforce consumer behaviour. Interestingly, the price sensitivity was observed to be less of an obstacle when bridged with the positive attitudes. Perceived convenience, such as information and accessibility, significantly contributes to green intention. The findings provide deeper insights into male consumer behaviour in the sustainable cosmetics market, offering implications for businesses seeking to tailor their strategies to penetrate and achieve broader sustainability goals.

Keywords: Green Cosmetics, Male Consumer Behaviour, Sustainable Consumption, Price Sensitivity, Perceived Environmental Benefit, Purchase Intention

Introduction

In the last few decades, increased awareness of the harmful effects of toxins has influenced public opinion toward the use of organic materials and environmental protection, known as green consumerism (Amberg & Fogarassy, 2019). It is creating a shift towards green alternatives for personal and environmental well-being (Acharya et al., 2021). The cosmetics industry has seen a significant boost in consumer spending on organic skin care products (Lakshmi et al. 2022). The growth and profitability of the cosmetics industry have attracted many new entrants, but to survive, businesses need to understand the drivers of consumer behaviour (Othman et al., 2022). Primarily, the market is driven by increasing environmental awareness, a shift in lifestyle towards natural products, and concerns about health and ethical issues (Rodrigues et al. 2023). The use of organic ingredients in cosmetic products is on the rise in countries such as China, Brazil, and India, driven by growing demand for natural products (Das, 2022). The cosmetics market in Pakistan generates

¹SZABIST University, Karachi. Email: mba2335164@szabist.pk

²SZABIST University, Karachi. Email: mazhar.ali@szabist.edu.pk

³Institute of Business Management, Karachi. Email: shumaila.kashif@iobm.edu.pk



annual revenue of around US \$783m, with a projected growth rate of 3.60% (CAGR) from 2025 to 2030, compared with the USA at \$21b (Statista, 2025). The worldwide market valuation for organic cosmetics and personal care products is projected to increase significantly, with estimates suggesting growth from nearly \$35 billion in 2021 to approximately \$59 billion by 2031 (Dominique, 2022). This estimated growth reflects growing shopper demand for organic and eco-friendly personal care products, driven by increased awareness of sustainability, environmental concerns, and health-consciousness among consumers worldwide.

The existing literature on cosmetics has focused on females (Bhatia, 2022), disregarding the sizable share of male consumers in the cosmetic industry. This gap becomes more pronounced in the perspective of green cosmetics (Ali et al., 2023). Furthermore, the green cosmetics market is characterised by price sensitivity, scepticism toward product performance, and social factors, making consumers' buying intentions more challenging (Walia et al., 2020; Bhatia, 2022). Since green personal care products are often more expensive than traditional ones, the interplay among product performance, environmental value, and the influence of social norms on sustainable buying behaviours is an important topic to understand in developing effective marketing strategies for the male segment. Moreover, the ease of purchase channels and the subjective feeling of control over behaviour are also modulating forces in buying decisions, further underscoring the complexity of consumer motivation within the industry (Upadhyaya & Sijoria, 2024). Marketers can also help achieve particular SDGs, including “responsible consumption and production and climate action”, by appealing to environmentally conscious consumers and aligning social good and profit (Khemani et al., 2025; Amoako et al., 2018). Therefore, the aim of this investigation is to understand the determinants of male consumers' green cosmetics purchase intentions, which reflects an increasing market potential. The study objectives are:

1. To examine men's perceived environmental benefits, price sensitivity, and product effectiveness on attitudes and purchase intentions toward green cosmetic products.
2. To investigate the influence of subjective norms on men's purchase intentions of green cosmetic products.
3. To assess the influence of purchase convenience on men's perceived behavioural control and purchase intentions of green cosmetic products.

Literature Review

The Theory of Planned Behaviour by Ajzen (1991) is a broad sociological concept that examines why people do what they do in social situations. It explains how consumers' attitude, social pressures, and sense of control influence their actions and decisions. Extant literature from other contexts, such as Greece (Delistavrou & Tilikidou, 2022), Brazil (Jaqueline et al., 2022), India (Manju, 2022), and Asia (Ali et al., 2022), examined factors that motivate people to purchase green cosmetics products. Consumer preferences for organic cosmetic products are changing in response to health and environmental concerns. Notably in Asia, awareness of the harmful effects of artificial cosmetics is increasing. This includes health consciousness, environmental awareness, the desire for uniqueness, price sensitivity, and product quality information (Ishaq et al, 2021). Tazeen et al. (2023) discussed the use of harmful chemicals and the emergence of bacteria, and emphasised the need for government regulation of the production and distribution of cosmetics.

Price sensitivity is the degree to which consumers are influenced by changes in product prices affecting buying decisions (Monroe, 2003). Consumers with high price sensitivity are more likely to switch brands and defer purchases. Likewise, consumers with low price sensitivity are less likely to change their choices due to unique product attributes and high brand loyalty (Kotler & Keller, 2016).

Price sensitivity can act as a barrier or facilitator depending on consumers' financial constraints, product quality and perceived price fairness (Sweeney & Soutar, 2001). The concept of product effectiveness in cosmetics is multidimensional. It can be used for cleaning the body, altering appearance, combating body odour, or protecting the body. Gonçalves (2009) stresses the role of biophysical methods in assessing the practicality of a product, namely its safety, stability, and sensory characteristics. Studies have repeatedly demonstrated that convenience is the most important non-price factor influencing purchase intention (Rashaduzzaman, 2020; Wang, 2023). Perceived convenience in accessing, searching, evaluating and transacting expedites online buying (Jiang et al., 2013). Online purchase intentions are conditioned by transaction convenience and, in turn, influence actual purchase (Indiani, 2020).

Attitude is an individual's psychological state for evaluating entities as liked or disliked (Eagly, 2007). It is a mental state that prepares a person to respond, shaping behaviour, and has a strong evaluative function (Shrigley, 1988). Attitudes are the general beliefs about people as well as cognitive, affective, and behavioural facets (Wolf et al., 2020). Various studies suggest that attitudes influence consumer buying behaviour for green cosmetics (Echchad & Ghaith, 2022; Fernando, 2017; Putri, 2021; Wiesa, 2019).

Subjective norms drive consumer decisions in green purchases. Sethi and Jain (2020) and Xu et al. (2022) both reported a moderate, positive association between subjective norms and green purchase intention and behaviour. Similarly, Arli (2018) contended that subjective norms are among the key factors influencing purchase intention for green products in developing economies. Zhuang et al. (2021) corroborate the roles of trust, perceived value, and subjective norm in green purchase intention.

Perceived Behavioural Control (PBC) is another relevant predictor for behavioural intentions and actions (Yzer, 2012). Trafimow (2002) broke down PBC into two components: perceived behavioural control and perceived difficulty, particularly the latter as the most effective predictor of intentions and behaviours. Kidwell (2003) viewed control as external and internal, with the former leading to the latter. Perlmutter (1983) recommends behavioural monitoring to improve PBC. Maichum (2016) and Arli (2018) also found that perceived behavioural control positively influences green buying behaviours, along with other factors such as attitude and subjective norms. Chauhan (2018) confirmed PCB as vital as other factors in directing consumers towards eco-friendly behaviour.

Hypothesis Development

Perceived environmental benefits, attitude, and purchase intentions

Perceived environmental benefits drive consumers' intentions to purchase green cosmetics by emphasising the positive environmental impact of such products. Favourable attitudes toward green cosmetics are more likely to develop among consumers who are conscious of the ecological benefits of such products, namely, reduced pollution, sustainability, and protection of natural resources (Ma et al., 2018; Putri et al., 2021). Attitude is a key mediator that transforms environmental knowledge into behavioural intentions (Ajzen, 1991; Eagly & Chaiken, 2007). In green Cosmetics, a positive attitude, conditioned by perceived environmental benefits, increases consumers' motivation and purchase intention, as it reflects their individual values and interest in environmental sustainability. As such, consumer attitude acts as a mediator between perceived environmental benefits and purchase intention, strengthening the likelihood that awareness of environmental benefits will lead to a greater intention to purchase green cosmetic products.

H1: There is a direct positive relationship between perceived environmental benefits when mediated by an attitude on green cosmetics purchase intentions.

Price Sensitivity, Attitude, and Purchase Intentions

Price significantly influences consumers' purchase intention towards green products, along with perceived value, perceived quality, and availability (Walia et al., 2020). For green cosmetics, consumer attitude is likely to mediate between price sensitivity and green purchase intention negatively, as green products tend to be more expensive than conventional products (Laroche et al., 2001). However, when consumers value environmental benefits and health impacts of green products, the influence of price as a barrier dilutes (Walia et al., 2020), and consumers' tendency to pay an extra price for green cosmetics increases. But when consumers hold a less favourable attitude toward eco-friendly products, they are expected to have lower purchase intentions for green cosmetics.

H2: Price sensitivity mediated by attitude has a negative relationship with Purchase Intentions towards Green Cosmetics".

Product effectiveness, attitude and relationship with Purchase Intentions

Product effectiveness and the intention to buy green cosmetic products are closely related, with consumer attitude as a mediator. Consumers appraise product effectiveness via the functional performance and physical benefits in green cosmetics (Limbu et al., 2023). They are drawn to them when they believe they provide satisfactory outcomes that are similar to, or even better than, those of conventional products (Shimul et al. 2022). This favourable attitude, both in terms of mental and emotional evaluations, subsequently leads to greater repurchase intention because consumers feel confident in the product's reliability and usefulness (Sapri et al., 2023). Thus, consumer attitude, stemming from perceptions of product effectiveness, is translated into behavioural intentions to purchase green products, suggesting a mediating role of attitude between product effectiveness and purchase intention.

H3: The relationship between product effectiveness and Purchase Intentions toward Green Cosmetics is mediated by attitude toward green cosmetics.

Subjective norms and purchase intentions

Subjective norms are perceived social pressure to conform to important others such as peers, family and friends (Ajzen, 1991). Empirical scholarship has demonstrated that consumers are disposed to buy green cosmetic products under implied social pressure coming from their social circle (Sethi & Jain, 2020). This effect becomes more pronounced in collectivist cultures where group behaviour shapes individual behaviour. The positive relationship between subjective norms and green product purchase intention is particularly relevant in the context of cosmetic products, which not only reflect personal choices but also social and ethical standards.

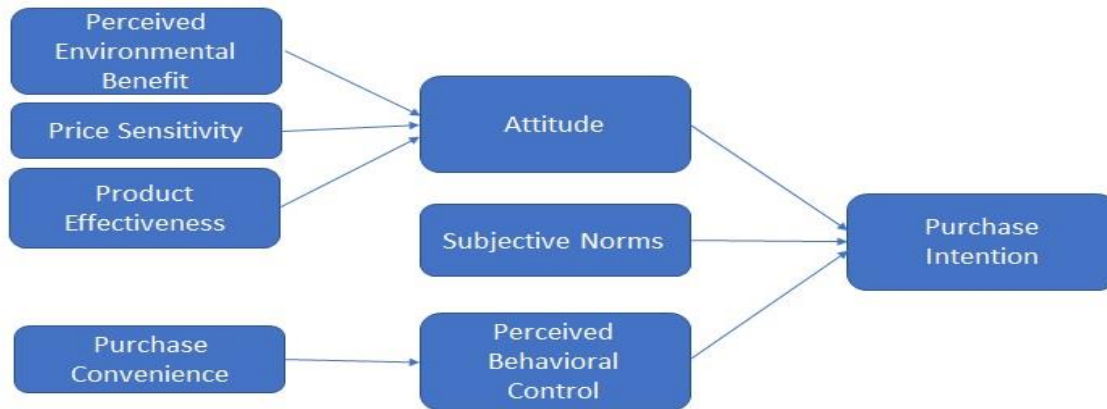
H4: Subjective norms have a positive relationship with Purchase Intentions towards Green Cosmetics.

Purchase Convenience, Perceived Behavioural Control and Purchase Intentions

Perceptions of convenience can affect purchase behaviour towards climate-friendly products, as customers rely on past experiences and potential barriers when making a decision (Gouveia et al., 2020). Therefore, purchase convenience, as a perceived product attribute, directly affects an individual's intention to buy green cosmetics. The tendency is likely to increase if a consumer believes that they can purchase green cosmetics, which influences an individual's certain behavioural intention (Gouveia et al., 2020). Afridi et al. (2021) found that perceived behavioural control positively influences consumers' intentions to engage in green purchases.

H5: Purchase Convenience mediated by Perceived Behavioural Control (PBC) has a positive relationship with Purchase Intentions towards Green Cosmetics.

Figure 1: Conceptual Framework



Methodology

The data was collected from prospective male consumers residing in the metropolitan city Karachi, Pakistan through google docs. A purposive sampling method with a screening question i.e. “How familiar are you with environmentally-friendly or “green” products, such as cosmetics, household items, or clothing?” was used for theory-based generalization (Calder et al., 1981).

The G*Power analysis was used to calculate the sample size as it is the most commonly adopted parameter standards in social science research (Faul et al., 2009) suggesting the required sample size as 155. Nonetheless, 244 questionnaires were administered to the respondents in an attempt to get enough responses. 14 responses were from female participants, while 230 were from the male participants. Based on the screening questions, 29 responses from males and all responses from females were excluded. This yields 201 usable responses with a response rate of 40.2%. This corresponds to Nulty (2008) about the average feedback rate in consumer studies with questionnaires is 40%-60%. All items were adopted from prior literature with established reliabilities (refer table 1) and, measured using five point Likert scale.

Data Analysis

The measurement model was assessed for reliability and validity. Cronbach’s Alpha (CA) and Composite Reliability (CR) values (refer table 1) are greater than the threshold of 0.70 as per DeVellis and Thorpe (2021) recommendations, establishing internal consistency of the constructs (Hair et al. 2019). Convergent validity was assessed using factor loadings and Average Variance Extracted (AVE), all values (table 1) were above the minimum range of 0.5 (Hair et al., 2019).

Table 1: Reliability and Validity

Constructs	Items	Loadings	AVE	CR	CA
Attitude (ATT) Paul et al., (2016)					
(1) I like the idea of purchasing green	ATT1	0.834	0.872	0.854	0.854
(2) Purchasing green is a good idea	ATT2	0.834			
Perceived Behavioral Control (PBC) Paul et al., (2016)					
(1) I believe I have the ability to purchase green products.	PBC1	0.871	0.752	0.890	0.890
(2) If it were entirely up to me, I am confident that I will purchase green products	PBC2	0.833			
(3) I see myself as capable of purchasing green products in future	PBC3	0.897			
(4) I have resources, time and willingness to purchase green products.	PBC4	0.866			
Purchase Convenience (PC) Jiang et al. (2013)					
(1) I can find and purchase green cosmetics wherever I shop.	PC1	0.917	0.831	0.898	0.898
(2) It is easy to find green cosmetics in stores.	PC2	0.930			
(3) Green cosmetics provide sufficient information on their packaging to identify different products.	PC3	0.888			
Product Effectiveness (PE) Gordon & Bruner (2012)					
(1) Green cosmetics work very well for me.	PE1	0.933	0.869	0.849	0.849
(2) Using green cosmetics is a good idea.	PE2	0.931			
Perceived Environmental Benefit (PEB) Paul et al. (2016) and Shimul et al. (2022)					
(1) I would be willing to reduce my consumption to help protect the environment	PEB1	0.646	0.684	0.842	0.873
(2) Major social changes are necessary to protect the natural environment	PEB2	0.888			
(3) I know how to select products and packages that reduce the amount of waste ending up in landfills.	PEB3	0.874			
(4) It is very important that the green cosmetic products have been produced in a way that animal rights have been respected.	PEB4	0.875			
Purchase Intention (PI) Shimul et al., (2022)					
(1) The probability I would consider buying the green cosmetics is high.	PI1	0.886	0.784	0.908	0.908
(2) I would buy the green cosmetics if I happened to see it.	PI2	0.879			
(3) I would actively seek out the green cosmetics in a place to purchase it.	PI3	0.880			
(4) If I were going to purchase a similar product, I would buy the green cosmetics.	PI4	0.897			
Price Sensitivity (PS) Laroche et al. (2001).					
(1) It is acceptable to pay 10 percent more for products that are produced, processed, and packaged in an environmentally friendly way.	PS1	0.851	0.794	0.869	0.874
(2) I would accept paying 10 percent more in taxes to fund an environmental cleanup program.	PS2	0.919			
(3) I would be willing to spend \$10 extra a week in order to buy less environmentally harmful products.	PS3	0.901			
Subjective Norms (SN) Munerah et al. (2021).					
(1) Most people who are important to me think I should purchase green products when going for purchasing.	SN1	0.922	0.837	0.903	0.903
(2) Most people who are important to me would want me to purchase green products when going for purchasing	SN2	0.914			
(3) People whose opinions I value would prefer that I purchase green products	SN3	0.909			

HTMT is considered robust than the Fornell-Larcker criterion approach for detecting the incidence of validity problems (Hair et al., 2015; 2019). All values (refer table -2) were within the conservative limit of 0.90 or below. Multicollinearity checks among variables were assessed via VIF values ranged from 1.341 to 3.388 confirming VIF is <5.

Table 2: HTMT Criterion

Constructs	ATT	PBC	PC	PE	PEB	PI	PS	SN
ATT	-							
PBC	0.731	-						
PC	0.852	0.824	-					
PE	0.827	0.762	0.885	-				
PEB	0.800	0.723	0.818	0.864	-			
PI	0.848	0.798	0.888	0.860	0.741	-		
PS	0.853	0.871	0.881	0.894	0.808	0.898	-	
SN	0.809	0.765	0.884	0.853	0.824	0.765	0.869	-

Model Fit Assessment and Structural Model Evaluation

The goodness of fit was assessed through SRMR. The SRMR value of the model was 0.084 which is also acceptable but is slightly higher than the suggested value of 0.08 (Hu & Bentler, 1998) but falls within satisfactory range. The NFI which tests the absolute fit of the hypothesized model to the chi-square value of the model was 0.901, implies a good model fit (Bentler & Bonett, 1980). Table 3 shows direct and specific indirect effects for hypotheses testing. Consumer attitude significantly mediates positive relationship ($b=0.066$, $p<0.05$) between perceived environment benefit and purchase intention for green cosmetic products, leading to acceptance of first hypothesis. Contrarily, mediating effect of consumers' attitude between price sensitivity and purchase intention was positive ($b=0.049$, $p<0.05$) against their negative hypothesized relationship, leading to rejection of second hypothesis. Third mediating hypothesis for consumers' attitude between product effectiveness and purchase intention of green products got statistical support ($b=0.091$, $p<0.05$), thus no evidence to reject the hypothesis. Fourth hypothesis of direct and positive impact of subjective norms on purchase intention ($b=0.301$, $p<0.01$) was also accepted. Last hypothesis about positive mediating effect of perceived behavioral control between purchase convenience and purchase intention ($b=0.370$, $p<0.01$) received statistically significant support. In conclusion four out of five hypotheses were supported.

Table 3: Path Analysis

Hypothesis	Path Coefficient	T-Statistics	P-Values	2.5%	97.5%	Decision
H1:PEB -> ATT -> PI	0.066	2.206	0.027	0.018	0.134	Accepted
H2:PS -> ATT -> PI	0.049	2.028	0.043	0.011	0.104	Rejected
H3:PE -> ATT -> PI	0.091	3.113	0.002	0.036	0.152	Accepted
H4:SN -> PI	0.301	3.682	0.000	0.136	0.457	Accepted
H5:PC -> PBC -> PI	0.370	5.434	0.000	0.246	0.516	Accepted

The R^2 value of purchase intention was 0.858 which mean 85.8% of the variations in green

cosmetics purchase intentions are explained by the model which supports the testing of proposed consumer behavior model (Hair et al. 2019). The value of the predictive relevance Q^2 was 0.329, a value greater than zero, reflecting predictive relevance as per the guidelines of Chin et al. (2010). Additionally, the calculated effect sizes (f^2) ranged from small to medium, while some of them were more than 0.35, reflecting the medium to large impact on the dependent variables.

In general, a R^2 value of 0.75 or above is considered substantial, 0.50 indicates a moderate fit, and 0.25 or lower is considered weak (Hair et al., 2011). All relationships have R^2 values greater than or equal to 0.50, demonstrating that the model explains a modest to substantial portion of the variance in the dependent variables.

All in all, the findings of the proposed structural model demonstrate an excellent fit, and the majority of the proposed relationships have some positive influence over green cosmetics purchase intentions. This contributes significantly to the understanding of the variables that affect male 'consumers' purchase intention of green cosmetic products.

Discussion

The analysis of the hypothesized model strongly validate the extended Theory of Planned Behavior (TPB) as a robust framework in predicting the male consumers purchase intentions of green cosmetics. Specifically, this study substantiate the attitude towards green cosmetics purchase as a motivation bridge which significantly mediates the relationship between perceived environment benefits, product effectiveness, and purchase intentions. This closely aligns with previous studies (Ma et al., 2018; Putri et al., 2021) and TPB's premise that attitude are evaluative states that transform beliefs into behavioral intentions. The perception of ecological value (Jaini et al., 2020). and functional efficacy (Limbu & Ahamed, 2023; Shimul et al. 2022) drive positive psychological state to readiness to purchase. Interestingly, male consumer green cosmetic price sensitivity negative relationship insignificance provide unique theoretical insights. Instead of acting as a barrier, price sensitivity, when mediated by positive attitude effect the intention positively. Hence within TPB framework, strong attitude toward sustainability and health can moderate or even overcome the perceived cost barrier. More importantly shifting consumer's focus from "expense" to "value" (Walia et al., 2020; Weisstein et al., 2014).

The results also highlights the significance of social influence and collectivism via subjective norms in the TPB model, particularly in Asian collectivist cultures like Pakistan. Despite being a male dominant society, the approval of peers and family act as a critical external motivator, reinforcing that green consumption is not a personal but socially responsible behavior (Sethi and Jain, 2020).

Lastly, TPB extension highlights the capability through convenience with the mediation of Perceived behavioral control between purchase convenience and intention. The significance of relationship confirms that behavioral intent is not solely based on desire but on subjective feeling of control and ease (Afridi et al. (2021). Broadly facilitating access and information reduces the perceived difficulty of the task, extending power to consumer to own and act on "their" green intentions.

Implications and Contribution

This study offers insights in to the novel under-explored male demographics in an emerging country's green cosmetics market providing a counter narrative to the female-centric focus of existing literature. The primary theoretical contribution is the extension of TPB to show a positive consumer attitude that can effectively channel the "price-intention gap". This reframe price

sensitivity not as an absolute deterrent in situations where environmental and performance values are high. Practically, it suggest marketers to focus on creating value-based pricing or premiumization, leveraging social influencers to build subjective norms and ensuring multi-channel availability to enhance perceived behavioral control. As male green cosmetic market is growing, aligning environmental education with product efficacy can help increase the market share while contributing to global sustainable development goals (SDGs).

Limitations and Future Research

The research targets only the male consumers in Karachi, Pakistan; therefore, generalization of the results may have limited transfer. Future studies can focus on purchase intention of green cosmetics by studying other demographics such as females and the rural community for generalized results.

This study is a cross-sectional study and could not capture changes in attitudes or behavior overtime, limiting its ability to show causality or trend. Furthermore, the research of the impact of new variables like brand personality, communication via digital and social media, and the impact of cultural niceties can better understand the process of consumer decision-making. The study might also test the effects of pricing and economic factors in more specifics particularly in other socio-economic settings. Also, by involving psychological constructs such as consumer trust, perceived risk, and emotional attachment to green products, can provide a more detailed explanatory capability. In general, future research must attempt to have a more holistic picture by including the behavioral, social, economic and technological perspectives in order to enhance sustainable development in the green cosmetics sector.

References

- Acharya, S., Bali, S., & Bhatia, B. S. (2021, February). Exploring consumer behavior towards sustainability of green cosmetics. In *2021 International Conference on Advances in Electrical, Computing, Communication and Sustainable Technologies (ICAECT)* (pp. 1–6). IEEE.
- Afridi, S. A., Khan, W., Haider, M., Shahjehan, A., & Afsar, B. (2021). Generativity and green purchasing behavior: Moderating role of man–nature orientation and perceived behavioral control. *SAGE Open*, 11(4). <https://doi.org/10.1177/21582440211054480>
- Ajzen, I. (1991). The theory of planned behavior. *Organizational Behavior and Human Decision Processes*, 50(2), 179–211.
- Ali, S., Javed, H. M. U., Ali, W., & Zahid, H. (2023). Decoding men’s behavioral responses toward green cosmetics: An investigation based on the belief decomposition approach. *Journal of Environmental Planning and Management*, 66(13), 2640–2667. <https://doi.org/10.1080/09640568.2022.2081137>
- Amberg, N., & Fogarassy, C. (2019). Green consumer behavior in the cosmetics market. *Resources*, 8(3), 137. <https://doi.org/10.3390/resources8030137>
- Amoako, G. K., Dzogbenuku, R. K., Doe, J., & Adjaisson, G. K. (2022). Green marketing and the SDGs: Emerging market perspective. *Marketing Intelligence & Planning*, 40(3), 310–327.
- Arli, D., Tan, L. P., Tjiptono, F., & Yang, L. (2018). Exploring consumers’ purchase intention towards green products in an emerging market: The role of consumers’ perceived readiness. *International Journal of Consumer Studies*, 42(4), 389–401.
- Bentler, P. M., & Bonett, D. G. (1980). Significance tests and goodness of fit in covariance structure analysis. *Psychological Bulletin*, 88(3), 588–606.
- Bhatia, M. (2022). Consumer behaviour towards green cosmetics: The literature signifying a shift towards circularity and sustainability. *International Journal of Scientific Research in*

Engineering and Management. <https://doi.org/10.55041/IJSREM15374>

- Calder, B. J., Phillips, L. W., & Tybout, A. M. (1981). Designing research for application. *Journal of Consumer Research*, 8(2), 197–207.
- Chauhan, V., & Bhagat, R. (2018). Analysing green purchasing behaviour through subjective norms and perceived behaviour control. *Journal of Commerce and Management*, 5(1), 46–55.
- Chin, W. W., Cheah, J. H., Liu, Y., Ting, H., Lim, X. J., & Cham, T. H. (2020). Demystifying the role of causal-predictive modeling using partial least squares structural equation modeling in information systems research. *Industrial Management & Data Systems*, 120(12), 2161–2209.
- Delistavrou, A., & Tilikidou, I. (2022). Consumers' intentions to buy cosmetics and detergents with ingredients made from recycled CO₂. *Sustainability*, 14(23), 16069.
- DeVellis, R. F., & Thorpe, C. T. (2021). *Scale development: Theory and applications*. Sage Publications.
- Das, R. (2022). Factors affecting the purchase of green personal care products. *Indian Scientific Journal of Research in Engineering and Management*, 6(5). <https://doi.org/10.55041/ijrsrem12894>
- Dominique, P. (2022). Global market value for natural and organic cosmetics and personal care from 2020 to 2031. Statista. <https://www.statista.com/statistics/673641/global-market-value-for-natural-cosmetics/>
- Eagly, A. H., & Chaiken, S. (2007). The advantages of an inclusive definition of attitude. *Social Cognition*, 25(5), 582–602.
- Echchad, M., & Ghaith, A. (2022). Purchasing intention of green cosmetics using the theory of planned behavior: The role of perceived quality and environmental consciousness. *Expert Journal of Marketing*, 10(1), 62–71.
- Faul, F., Erdfelder, E., Buchner, A., & Lang, A. G. (2009). Statistical power analyses using G*Power 3.1: Tests for correlation and regression analyses. *Behavior Research Methods*, 41(4), 1149–1160.
- Fernando, P., & Hennayake, H. (2017). Study of consumer attitudes towards green cosmetic products and its impact on consumer purchase intention. In *International Conference on Advanced Marketing*, Colombo.
- Gonçalves, J., Santos, A. R., Kieling, A. P., & Tezza, R. (2022). The influence of environmental engagement in the decision to purchase sustainable cosmetics: An analysis using the Theory of Planned Behavior. *Revista de Administração da UFSM*, 15(3), 541–562.
- Hair, J. F., Risher, J. J., Sarstedt, M., & Ringle, C. M. (2019). When to use and how to report the results of PLS-SEM. *European Business Review*, 31(1), 2–24.
- Hu, L. T., & Bentler, P. M. (1998). Fit indices in covariance structure modeling: Sensitivity to underparameterized model misspecification. *Psychological Methods*, 3(4), 424–453.
- Indiani, N. L. P., & Fahik, G. A. (2020). Conversion of online purchase intention into actual purchase: The moderating role of transaction security and convenience. *Business: Theory and Practice*, 21(1), 18–29.
- Ishaq, S., Badar, H., & Javed, H. (2021). Factors influencing female purchase behavior for organic cosmetic products in Pakistan. *Global Social Sciences Review*, 6(1), 396–407.
- Jaini, A., Quoquab, F., Mohammad, J., & Hussin, N. (2020). Antecedents of green purchase behavior of cosmetics products: An empirical investigation among Malaysian consumers. *International Journal of Ethics and Systems*, 36(2), 185–203.

- Jiang, L., Yang, Z., & Jun, M. (2013). Measuring consumer perceptions of online shopping convenience. *Journal of Service Management*, 24(2), 191–214.
- Khemani, S. V., Ali, M., & Kashif, S. (2025). Green marketing for people and planet: 7Ps and green knowledge impact on Nestlé single-use plastic water bottle repurchase intentions in Pakistan. *Journal of Asian Development Studies*, 14(2), 1893–1905.
- Kotler, P., & Keller, K. L. (2016). *Marketing management* (15th ed.). Pearson.
- Laroche, M., Bergeron, J., & Barbaro-Forleo, G. (2001). Targeting consumers who are willing to pay more for environmentally friendly products. *Journal of Consumer Marketing*, 18(6), 503–520.
- Limbu, Y. B., & Ahamed, A. F. M. J. (2023). What influences green cosmetics purchase intention and behavior? A systematic review and future research agenda. *Sustainability*, 15, 11881.
- Ma, G., Rau, P.-P. L., & Guo, Z. (2018). The effects of environmental awareness and consumption value on green makeup product purchase intentions. *Psychology*, 9(7), 1898–1916.
- Maichum, K., Parichatnon, S., & Peng, K. (2016). Application of the extended theory of planned behavior model to investigate purchase intention of green products among Thai consumers. *Sustainability*, 8, 1077.
- Monroe, K. B. (2003). *Pricing: Making profitable decisions* (3rd ed.). McGraw-Hill.
- Munerah, S., Koay, K. Y., & Thambiah, S. (2021). Factors influencing non-green consumers' purchase intention: A partial least squares structural equation modelling approach. *Journal of Cleaner Production*, 280, 124192.
- Nulty, D. D. (2008). The adequacy of response rates to online and paper surveys. *Assessment & Evaluation in Higher Education*, 33(3), 301–314.
- Othman, A. S., Abd Rahman, I., Teoh, N., Omar, A. R. C., & Osman, L. H. (2022). An empirical study on the factors influencing consumers' purchase intention of cosmetic products. *Malaysian Journal of Social Sciences and Humanities*, 7(6), e001512.
- Paul, J., Modi, A., & Patel, J. (2016). Predicting green product consumption using theory of planned behavior and reasoned action. *Journal of Retailing and Consumer Services*, 29, 123–134.
- Putri, N. W. A., Wahyuni, N. M., & Yasa, P. N. S. (2021). The effect of attitude in mediating environmental knowledge towards the purchase intention of green cosmetic product. *Jurnal Ekonomi dan Bisnis Jagaditha*, 8(2), 202–208.
- Rashaduzzaman, M. (2020). Influence of convenience, time-savings, price, and product variety on online apparel purchase intention. University of Nebraska-Lincoln.
- Rodrigues, A. C., Pires, P. B., Delgado, C., & Santos, J. D. (2023). Green cosmetics: Determinants of purchase intention. In *Advances in marketing, customer relationship management, and e-services book series* (pp. 41-67). IGI Global. <https://doi.org/10.4018/978-1-6684-8681-8.ch003>
- Sapri, N. S. A., Ghani, M. R. A., & Yusuf, D. H. M. (2023). Factors influencing consumer purchase intention towards green cosmetics products among young consumers in Malaysia. *International Journal of Entrepreneurship and Management Practices*, 6(23), 131–142.
- Sethi, V., & Jain, A. (2020). The role of subjective norms in purchase behaviour of green FMCG products. *International Journal of Technology Transfer and Commercialisation*, 17(2/3), 219.
- Shimul, A. S., Cheah, I., & Khan, B. B. (2022). Investigating female shoppers' attitude and purchase intention toward green cosmetics in South Africa. *Journal of Global Marketing*,

- 35(1), 37–56.
- Statista. (2025). Cosmetics—Pakistan market forecast. <https://www.statista.com/outlook/cmo/beauty-personal-care/cosmetics/pakistan>
 - Sweeney, J. C., & Soutar, G. N. (2001). Consumer perceived value: The development of a multiple item scale. *Journal of Retailing*, 77(2), 203–220.
 - Tazeen, S., Rahman, S., Abbas, R., Shahid, S. A., Shinwari, Z. K., & Ali, M. (2023). Isolation and detection of bacterial strains from cosmetics products available in Pakistan. *Proceedings of the Pakistan Academy of Sciences*, 60(S), 83–92.
 - Upadhyaya, A. S., & Sijoria, C. (2024). Customers' purchase intention of green cosmetics in India: Empirical validations using an extended Theory of Planned Behavior. *Indian Journal of Marketing*, 54(8), 60–77.
 - Walia, S. B., Kumar, H., & Negi, N. (2020). Impact of brand consciousness, perceived quality, price sensitivity and product availability on green purchase intention. *International Journal of Technology Management and Sustainable Development*, 19, 107–118.
 - Wang, C., Liu, X., Zhang, Y., Li, J., & Chen, H. (2023). The influence of consumer perception on purchase intention. *Heliyon*, 9(10), e21342.
 - Weisstein, F. L., Asgari, M. R., & Siew, S. (2014). Price presentation effects on green purchase intentions. *Journal of Product & Brand Management*, 23, 230–239.
 - Wolf, L. J., Haddock, G., & Maio, G. R. (2020). Attitudes. *Oxford Research Encyclopedia of Psychology*.
 - Xu, Y., Du, J., Khan, M. A. S., Jin, S., Altaf, M., Anwar, F., & Sharif, I. (2022). Effects of subjective norms and environmental mechanism on green purchase behavior. *Frontiers in Environmental Science*, 10, 779629.
 - Zhuang, W., Luo, X., & Riaz, M. U. (2021). On the factors influencing green purchase intention: A meta-analysis approach. *Frontiers in Psychology*, 12, 644020.