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Influence of Eco-Friendly Product Attributes, Corporate Social Responsibility, and Sustainable Branding on Consumer Preferences in the Cosmetics Industry in Mthatha

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Abstract: This study investigates the impact of eco-friendly product attributes, corporate social responsibility (CSR), and sustainable branding on consumer preferences for cosmetic products in Mthatha (Eastern Cape, South Africa). A quantitative survey of 150 consumers in Mthatha was conducted, and the data were analysed using SmartPLS, SPSS, and structural equation modelling (SEM) to test the hypothesised relationships between the identified sustainability factors and consumer preferences. The results indicate that CSR practices and sustainable branding have a significant positive influence on consumer preferences for cosmetics, whereas the influence of eco-friendly product attributes is not statistically significant. The findings suggest that policymakers and cosmetics firms should prioritise transparent CSR initiatives and authentic sustainability branding. Policymakers could incentivise eco-certification and consumer education, while companies integrate genuine sustainable practices into branding to better align products with consumer values. This research provides novel insights by examining these sustainability factors in an under-researched emerging market context. It

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addresses a knowledge gap by identifying which factors most strongly drive consumer preferences in the South African cosmetics sector, thereby informing sustainable marketing strategies.

Keywords: Eco-Friendly Products; Corporate Social Responsibility; Sustainable Branding; Consumer Behaviour

JEL Classification: M31; M14; D91

1. Introduction

1.1. Background of the Study

The cosmetics industry is one of the fastest-growing segments of the global consumer goods market, with its origins rooted in ancient civilizations that used natural substances for adornment and skincare (McNeil & Riello, 2016). Over time, the industry has evolved from focusing solely on beauty enhancement to embracing broader concerns such as environmental responsibility, ethical sourcing, and social accountability (Sahota, 2014). This transformation reflects the growing emphasis on sustainability, a concept defined by practices that meet present needs without compromising the ability of future generations to meet their own (Camilleri, 2017).

Sustainable cosmetics encompass eco-friendly production, biodegradable packaging, cruelty-free testing, and fair-trade ingredient sourcing. These practices not only minimize environmental harm but also align with corporate social responsibility (CSR) principles by reducing carbon footprints, promoting ethical labour practices, and supporting community welfare (Dube & Dube, 2023). In response to increasing environmental awareness, many cosmetic brands now integrate sustainability into their brand identity and marketing strategies. Through sustainable branding, companies communicate their ethical values, transparency, and environmental commitments to consumers, often reinforced through eco-labels and third-party certifications (Kadam, 2024).

Globally, consumers, particularly younger generations, are shifting towards value-driven purchasing, seeking products that reflect their personal ethics and environmental consciousness (Tran, 2022; Cherian, 2023). Consequently, sustainability has become both a moral imperative and a competitive differentiator within the cosmetics sector. However, the degree to which eco-friendly product attributes, CSR initiatives, and sustainable branding influence consumer behaviour varies across regions and cultural contexts. Understanding these dynamics within local markets, such as Mthatha in South Africa's Eastern Cape, is essential for brands

seeking to build meaningful consumer relationships while advancing sustainability goals.

1.2. Problem Statement and Objective of the Study

South Africa's cosmetics industry is expanding rapidly, valued at USD 832.76 million in 2025 and projected to reach USD 1.17 billion by 2030 (Mordor Intelligence, 2025). This growth reflects a global shift toward ethical and sustainable consumption, with the sustainable beauty market expected to exceed USD 430 billion by 2034 (Insight Ace Analytic, 2025). Locally, about 38 percent of consumers report regularly choosing sustainable packaging, 15 percent above the global average, signalling heightened environmental awareness (Hattingh & Ramlakan, 2022). Statista data further show that South Africa's natural and organic cosmetics segment is growing at roughly 7 percent annually, driven by ethical and environmental concerns (Pharmgenity Health, 2024).

Despite this momentum, a persistent "green purchasing gap" remains, consumers express strong intentions to buy eco-friendly cosmetics but seldom act on them (Dwivedi et al., 2025). Mahowa (2021) found that while awareness and environmental concern predict intention, limited product availability, cost, and weak CSR messaging hinder actual purchases. Similarly, Synodinos (2023) reported that loyalty in South Africa's green beauty market is shaped by perceived quality ($\beta = 0.23$), price ($\beta = 0.41$), and green trust ($\beta = 0.27$).

Most existing studies focus on metropolitan consumers in Johannesburg and Cape Town, leaving semi-urban regions like Mthatha underexplored. This study addresses that gap by examining how eco-friendly product attributes, corporate social responsibility, and sustainable branding influence consumer preferences in Mthatha's cosmetics market, providing insight for brands seeking to align sustainability with local consumer behaviour.

2. Literature Review

2.1 Theoretical Framework

This study is anchored in the Theory of Planned Behaviour (TPB) (Ajzen, 1991), which posits that behavioural intention is influenced by attitude, subjective norms, and perceived behavioural control. Applied to green consumerism, TPB explains

how consumers' positive attitudes toward sustainable products, social expectations favouring ethical consumption, and confidence in their ability to purchase such products jointly determine buying intentions. In South Africa, Bevan-Dye and Synodinos (2025) demonstrated that extending TPB with environmental knowledge and ethical beliefs accounted for 77% of the variance in green beauty purchase intentions, underscoring its relevance in sustainability research.

Empirically, studies show that eco-friendly product attributes, corporate social responsibility (CSR), and sustainable branding each shape consumer attitudes and intentions through the TPB's three components. Eco-friendly attributes such as natural ingredients and recyclable packaging, foster favourable attitudes and social endorsement, particularly when products are accessible and affordable (Perret et al., 2025; Alenazi, 2025). CSR initiatives strengthen brand attitudes and normative pressure to support socially responsible companies (Vaz, 2021; Akbari et al., 2019). Similarly, sustainable branding enhances trust and positive attitudes by signalling environmental commitment, although consumer scepticism caused by greenwashing can weaken this relationship (Theocharis, 2025; Tu et al., 2024).

Overall, the TPB framework integrates these factors to explain consumer preference for cosmetics. Prior research confirms that sustainability-oriented attributes, CSR, and branding influence ethical consumption (Shimul et al., 2022), yet economic realities often moderate these effects. In contexts such as Mthatha, affordability and product availability may constrain behavioural control, preventing positive attitudes from translating into actual purchases (Besharat et al., 2024; Brückel & Schneider, 2019). Hence, this study examines how this sustainability drivers operate within an emerging market to determine their combined influence on consumer preferences for cosmetic products.

2.2. Conceptual Framework and Hypothesis Development

A conceptual framework aids project conceptualization and execution by serving as a study's road map. It overviews the study's main points and illustrates potential connections (Charles, 2021). The conceptual framework for this study can be found in Figure 1.

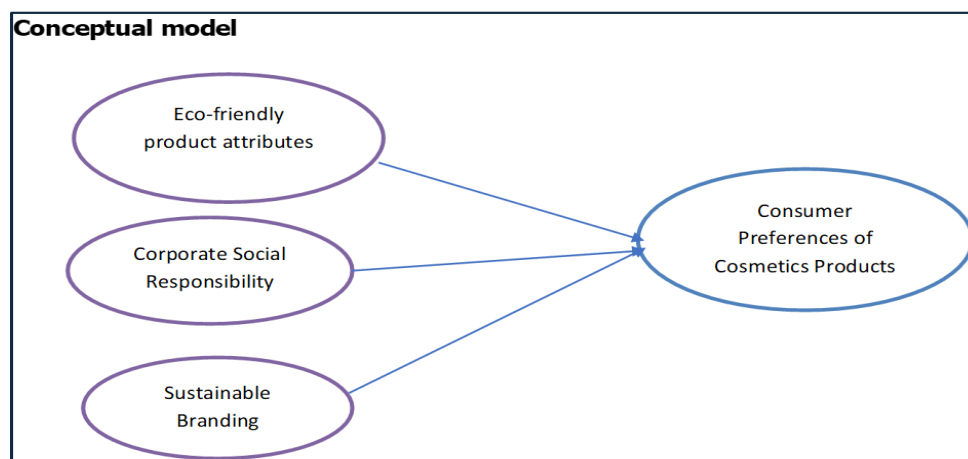


Figure 1. Conceptual Framework of the study

H₁: There is a positive relationship between eco-friendly product attributes and consumer preferences for cosmetic products in Mthatha.

H₂: There is a positive relationship between corporate social responsibility and consumer preferences for cosmetic products in Mthatha.

H₃: There is a positive relationship between sustainable branding and consumer preferences for cosmetic products in Mthatha.

3. Methodology

This section outlines research design, sampling, data collection, analysis, and ethical procedures.

3.1. Research Design

This quantitative survey used a structured questionnaire administered to 150 adult cosmetics consumers in Mthatha, Eastern Cape, measuring eco-friendly product attributes, corporate social responsibility, sustainable branding, and consumer preference using validated Likert-scale items. Data were analysed in SPSS v23 and SmartPLS 3 using PLS-SEM, suitable for prediction-oriented models with latent constructs and small samples. Reliability and validity met standard thresholds. Ethical clearance was granted by Walter Sisulu University (Ref. 028/2024/HBM/BME-5295); participation was voluntary, with informed consent and anonymised confidentiality.

4. Results and Discussion

4.1. Measurement of Reliability

Reliability and validity analyses confirmed that all measurement scales were robust. Cronbach's alpha values ranged from 0.697 to 0.867, and composite reliability from 0.832 to 0.909, both exceeding the acceptable 0.70 threshold (Chinomona & Cheng, 2013). Average Variance Extracted (AVE) values were above 0.50 for all constructs, indicating adequate convergent validity (Taber, 2018). Discriminant validity, assessed using the Fornell-Larcker criterion, showed that the square root of each construct's AVE was greater than its inter-construct correlations, confirming construct distinctiveness (Hattie & Cooksey, 1984).

Table 1. Reliability and Convergent Validity (Cronbach's α , Composite Reliability, and AVE)

Construct	Cronbach's α	Composite Reliability (ρ_c)	Average Variance Extracted
Consumer Preference (CP)	0.858	0.903	0.701
Corporate Social Responsibility (CSR)	0.697	0.832	0.623
Eco-Friendly Product Attributes (EFPA)	0.761	0.848	0.583
Sustainable Branding (SB)	0.867	0.909	0.715

All reliability coefficients exceed the recommended 0.70 level; AVE = Average Variance Extracted.

4.2. Discriminant Validity

Discriminant validity was assessed using the Fornell-Larcker criterion, which requires that the square root of each construct's AVE exceeds its correlations with other constructs. As shown in Table 2, the square roots of the AVE values for Consumer Preference (0.837), Corporate Social Responsibility (0.789), Eco-Friendly Product Attributes (0.764), and Sustainable Branding (0.846) were all greater than their corresponding inter-construct correlations, confirming adequate discriminant validity.

Table 2. Fornell-Larcker Discriminant Validity Criterion

	CP	CSR	EFPA	SB
Consumer Preference (CP)	0.837			
Corporate Social Responsibility (CSR)	0.671	0.789		
Eco-Friendly Product Attributes (EFPA)	0.621	0.703	0.764	
Sustainable Branding (SB)	0.706	0.730	0.706	0.846

Diagonal elements (in bold) are the square roots of AVE for each construct; off diagonals are inter-construct correlations.

4.3. Construct Correlation Matrix

The correlation matrix in Table 3 further illustrates the relationships among constructs. Notably, sustainable branding exhibited the strongest association with consumer preference (CP) ($r = 0.706$), whereas eco-friendly product attributes showed the weakest correlation with CP ($r = 0.621$). According to conventional criteria (Malgady & Krebs, 1986), the CP–SB correlation of ~ 0.71 can be considered strong, while the correlations of CP with CSR (~ 0.67) and EFPA (~ 0.62) are moderate in magnitude. These patterns hint that sustainable branding is closely aligned with how consumers choose cosmetics, more so than basic eco-friendly features or even CSR, a point we explore in the hypothesis tests and discussion below.

Table 3. Correlation Matrix of Constructs

	CP	CSR	CFPA	SB
Consumer Preference (CP)	1.000	0.671	0.621	0.706
Corporate Social Responsibility (CSR)	0.671	1.000	0.703	0.730
Eco-Friendly Product Attributes (EFPA)	0.621	0.703	1.000	0.706
Sustainable Branding (SB)	0.706	0.730	0.706	1.000

4.4. Structural Equation Modelling (SEM)

4.4.1. Model Path Coefficients Overview

Following confirmation of the measurement model, the structural model was assessed to test the proposed hypotheses. All path coefficients were positive (see Table 4). Eco-friendly product attributes (EFPA) had a small and non-significant

effect on consumer preference ($\beta = 0.141$, $p = 0.229$, $t = 1.204$). Corporate social responsibility (CSR) showed a significant positive influence ($\beta = 0.275$, $p = 0.028$, $t = 2.197$), while sustainable branding (SB) had the strongest and most significant effect ($\beta = 0.406$, $p = 0.003$, $t = 3.015$). Overall, two of the three sustainability-related factors, CSR and SB, significantly influenced consumer preferences for cosmetic products in Mthatha.

4.4.2. Hypotheses Testing Results

Structural equation modelling (SEM) is a powerful multivariate technique that is increasingly employed in scientific investigations to test and evaluate multivariate causal links, according to Manhas et al., (2013). The structural equation models the researcher used to determine the link between the one dependent variable (CP) and the three independent variables (AFPA, CSR, and SB) is shown below.

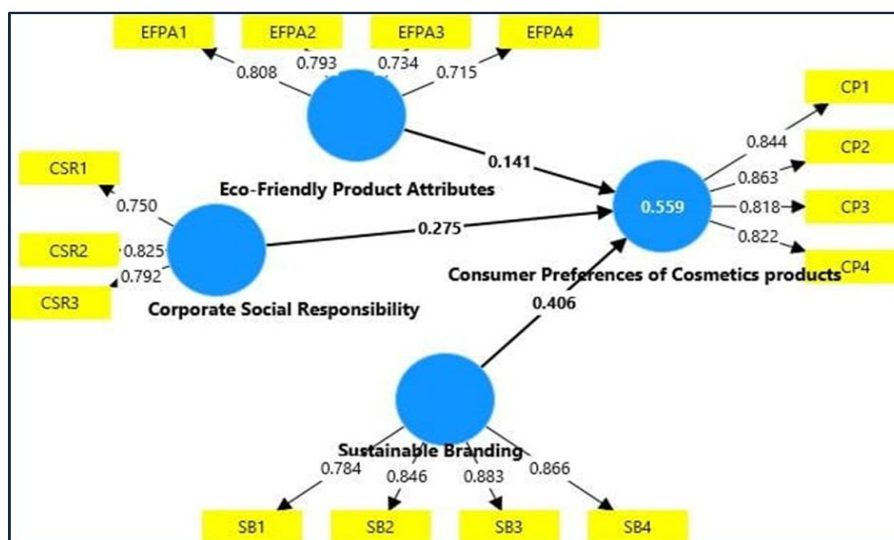


Figure 2. Structural equation model

Figure 2 illustrates the three tested hypotheses and their standardized path coefficients. According to Turner and Stevens (1959), coefficients range between -1 and $+1$, where values closer to $+1$ indicate strong positive relationships. All hypothesized paths were positive: eco-friendly product attributes showed the weakest relationship with consumer preference ($\beta = 0.141$), corporate social responsibility showed a moderate positive relationship ($\beta = 0.257$), and sustainable branding demonstrated the strongest relationship ($\beta = 0.406$).

4.5. Path Analysis Results

The non-significant effect of eco-friendly product attributes (H1) suggests that while consumers value “green” features, these alone do not strongly drive purchases, reflecting the common attitude–behaviour gap in sustainable consumption (Ha, 2020; Mahowa, 2021). Price sensitivity, limited availability, and scepticism toward sustainability claims often hinder actual buying behaviour. South African consumers remain in a “green awakening” phase, with limited eco-label awareness and low trust in environmental claims (Struwig & Adendorff, 2018). Greenwashing further undermines confidence (Seberíni et al., 2024), meaning eco-friendly features must be supported by affordability, education, and credible certification to influence preferences.

In contrast, CSR (H2) had a significant positive effect on consumer preference, aligning with evidence that socially responsible brands build trust and loyalty (Snavastava, 2024; Akbari et al., 2019). Authentic CSR initiatives such as community engagement or eco-conscious operations, enhance brand reputation and perceived ethicality, particularly among younger consumers who prioritise purposeful brands (Papadopoulos, 2025). However, CSR impact depends on authenticity and relevance to local values (Porter & Kramer, 2019).

Sustainable branding (H3) exerted the strongest influence, confirming the importance of transparent, sustainability-oriented brand communication (Grubor & Milovanov, 2017; Testa et al., 2021). Millennials and Gen Z show high loyalty to brands that authentically integrate sustainability (Salam et al., 2024), while misleading “green” claims can erode trust (Farooq & Wicaksono, 2021; Tu et al., 2024). Credible, evidence-based branding thus provides a competitive edge by shaping attitudes and social norms in line with the Theory of Planned Behaviour, fostering long-term loyalty and preference (Hegner, Fenko & Teravest, 2017; Hussain et al., 2023).

Table 4. Hypothesis Testing

Hypothesis	Path (Relationship)	β	t-statistic	p-value	Outcome
H ₁	EFPA → CP (Eco-friendly product attributes → Consumer preference)	0.141	1.204	0.229	Not Significant and supported
H ₂	CSR → CP (Corporate social responsibility → Consumer preference)	0.275	2.197	0.028	Significant and supported

H ₃	SB → CP (Sustainable branding → Consumer preference)	0.406	3.015	0.003	Significant and supported
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Notes: β = standardized path coefficient. Supported hypotheses are significant at $p < 0.05$ (two-tailed). EFPA = Eco-Friendly Product Attributes; CSR = Corporate Social Responsibility; SB = Sustainable Branding; CP = Consumer Preference.

4.6. Interpretation of Key Findings

The non-significant relationship between eco-friendly product attributes and consumer preferences (H1) indicates that positive attitudes toward “green” features do not automatically translate into purchase preference in this context. This reflects the well-established attitude–behavior gap in sustainable consumption (Ha, 2020). In Mthatha, consumers may value eco-friendly ingredients or packaging in principle, but purchasing decisions appear constrained by affordability, limited availability, and low trust in environmental claims. Prior South African studies similarly report weak eco-label awareness and skepticism toward sustainability messaging, often linked to greenwashing (Struwig & Adendorff, 2018; Seberini et al., 2024). As a result, eco-friendly attributes alone are insufficient to significantly influence consumer preferences in this semi-urban setting.

Corporate social responsibility (CSR) showed a significant positive effect on consumer preferences (H2), suggesting that consumers respond more strongly to brands that demonstrate visible and socially relevant responsibility. This finding aligns with evidence that CSR enhances brand trust and perceived ethicality, particularly in emerging markets where consumers expect firms to contribute to social and community well-being (Akbari et al., 2019; Srivastava, 2024). In Mthatha, CSR initiatives likely resonate because they signal genuine concern for local development and environmental stewardship. However, the effectiveness of CSR depends on perceived authenticity; initiatives viewed as symbolic or disconnected from local needs may lose influence. When credible, CSR functions as a signal of brand integrity, reducing uncertainty and strengthening consumer preference.

Sustainable branding exerted the strongest influence on consumer preferences (H3), highlighting the central role of brand-level sustainability communication. This suggests that consumers place greater emphasis on a brand’s overall sustainability identity than on individual product-level eco-features. Consistent with prior research, sustainability-oriented branding strengthens trust and loyalty by signalling

ethical commitment, while inconsistent or misleading claims undermine credibility (Grubor & Milovanov, 2017; Tu et al., 2024). In a semi-urban context where detailed product knowledge may be limited, consumers are more likely to rely on brand reputation and communicated values as decision cues. Collectively, the findings indicate that sustainable branding and CSR shape attitudes and subjective norms more strongly than product attributes, extending the Theory of Planned Behaviour by showing that corporate-level sustainability signals are more influential than product-level features in contexts with economic and informational constraints.

4.7. Contextual Insights: Mthatha vs. Metropolitan Markets

A key contribution of this study lies in its focus on Mthatha as a semi-urban, emerging market context and the comparison of its findings with those from metropolitan and developed markets. In established cosmetics markets such as Europe, North America, and South Africa's major cities, consumers typically exhibit higher sustainability awareness, broader access to green products, and stronger demand for product-level eco-friendly attributes (Dlamini & Mahowa, 2024; Persistent Market Research 2026; Strait research 2025). In such contexts, features like natural ingredients, organic certification, and recyclable packaging are often expected and can significantly influence purchase decisions (Herbes et al., 2020). By contrast, the present study found that eco-friendly product attributes did not significantly affect consumer preferences in Mthatha, indicating a different decision-making dynamic.

This contrast suggests that semi-urban consumers may place less emphasis on detailed product eco-attributes due to lower exposure to sustainability information, fewer green product options, and stronger economic constraints related to price and quality. Instead, consumers in Mthatha appear to rely more heavily on broader indicators of trust and credibility, particularly corporate social responsibility and sustainable branding. Brands perceived as ethical, community-oriented, and socially responsible are therefore more likely to gain consumer preference, even if individual product-level eco-features are modest. In this context, CSR and branding function as heuristic cues that simplify decision-making under conditions of limited information and constrained choice.

These contextual differences underscore the novelty and theoretical relevance of the study. While the direction of sustainability effects aligns with prior theory, the

relative importance of sustainability drivers differs by market maturity. The findings challenge assumptions that sustainability-oriented consumer behaviour models, including the Theory of Planned Behaviour, operate uniformly across contexts. Instead, they suggest that in emerging markets, normative and trust-based factors currently outweigh product-specific considerations. For practitioners, this highlights the need for context-sensitive sustainability strategies: in semi-urban settings like Mthatha, building brand credibility and social legitimacy should precede an emphasis on advanced eco-product features. As such markets mature, product-level sustainability attributes may become more influential, reinforcing the importance of phased and locally grounded sustainability strategies.

5. Conclusion and Recommendations

5.1 Theoretical Contributions and Conclusions

This study examined the influence of eco-friendly product attributes, corporate social responsibility (CSR), and sustainable branding on consumer preferences for cosmetics in Mthatha, a semi-urban region of South Africa. The results show that sustainable branding ($\beta = 0.406$) and CSR ($\beta = 0.275$) have significant positive effects on consumer preferences, while eco-friendly product attributes ($\beta = 0.141$) exert a weak and non-significant influence. These findings indicate that offering “green” product features alone is insufficient to drive consumer preference in this context unless supported by affordability, availability, and credible communication. Consumers appear more responsive to sustainability signals embedded at the brand and corporate level than to isolated product-level claims.

From a managerial perspective, the findings suggest that cosmetic firms targeting semi-urban and emerging markets should prioritise transparent CSR initiatives and authentic sustainability-driven branding to build trust and loyalty. Investments in ethical sourcing, community-oriented initiatives, and consistent sustainability messaging can strengthen brand equity and emotional connection with consumers. In contrast, an overreliance on product-level eco-claims without visible social or ethical commitments is unlikely to translate positive attitudes into purchase preference. In this setting, products may be environmentally friendly, but brands must also be perceived as ethically credible.

Theoretically, this study reinforces and extends the Theory of Planned Behaviour in an emerging-market context by showing that sustainability-related attitudes and

subjective norms operate more strongly at the brand level than at the product level. While positive attitudes toward eco-friendly features did not significantly influence preference, favourable attitudes toward sustainable brands and socially responsible firms did. This suggests that in semi-urban markets with economic and informational constraints, trust, credibility, and normative beliefs about companies play a more decisive role than product greenness alone. By highlighting the importance of corporate-level sustainability signals, the study refines existing green consumer behaviour models and demonstrates that pathways from sustainability attitudes to behaviour are context-dependent rather than universal.

5.2. Recommendations and Implications for Business Practices

Cosmetics companies should integrate sustainability and social responsibility into their core business and communication strategies. Transparent disclosure of CSR and environmental efforts through certifications, eco-labels, or sustainability reports enhances authenticity and mitigates consumer scepticism (Pérez Ruiz, 2019). Genuine action such as ethical sourcing, recyclable or biodegradable packaging, and circular initiatives like refill or take-back programs, reinforces credibility and builds trust (Krywalski-Santiago, 2024). Collaborations with local communities and suppliers in areas like the Eastern Cape can further strengthen brand relatability and social value.

Sustainability should form part of a brand's identity rather than a marketing add-on. Embedding CSR principles into brand storytelling fosters emotional connection and loyalty, particularly among younger consumers who prioritise ethical consumption (Yu et al., 2022). When combined with product quality and affordability, sustainable practices can appeal to price-conscious consumers while maintaining competitiveness. Aligning operations with authentic sustainability values thus enhances consumer loyalty, brand equity, and long-term resilience in South Africa's cosmetics industry.

5.3. Limitations and Future Research Directions

This study is subject to several limitations that also point to opportunities for future research. First, the sample size of 150 consumers, while adequate for exploratory analysis, limits the statistical power and generalisability of the findings. The sample was drawn from a single semi-urban context (Mthatha, Eastern Cape) and may not

fully capture the diversity of consumer perspectives within South Africa or other emerging markets. As consumer behaviour is shaped by socio-economic conditions, market access, and cultural exposure, future studies should employ larger and more diverse samples across multiple regions. Comparative research spanning urban, peri-urban, and rural settings would be particularly valuable in assessing how market maturity influences the relative importance of eco-friendly attributes, CSR, and sustainable branding.

Second, the study adopted a cross-sectional design based on self-reported data, capturing stated preferences and intentions at a single point in time rather than actual purchasing behaviour. This limits causal inference and raises the possibility of social desirability bias, whereby respondents may overstate pro-sustainability attitudes. Longitudinal designs would allow researchers to examine whether the influence of CSR and sustainable branding strengthens as markets mature, awareness increases, or product availability improves. Complementary qualitative approaches, such as interviews or focus groups, could also deepen understanding of why consumers may distrust eco-friendly claims, how they interpret CSR initiatives, and which sustainability signals resonate most strongly in semi-urban communities.

Finally, future research could extend the current model by incorporating additional explanatory factors. Consumer environmental knowledge, sustainability literacy, and exposure to digital media may moderate how sustainability-related attitudes translate into preferences. In particular, the role of social media and influencer communication in shaping green norms warrants attention, given the growing digital engagement of younger consumers. Further theoretical integration, such as combining the Theory of Planned Behaviour with value-based (VBN) or institutional perspectives, could offer a more comprehensive explanation of sustainable consumption in under-regulated or emerging markets. Despite its limitations, this study provides a valuable foundation for advancing theory and practice by highlighting the context-dependent nature of sustainable consumer behaviour in semi-urban settings.

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