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GREEN MARKETING MIX STRATEGIES AND CONSUMER BUYING BEHAVIOR: EVIDENCE FROM UAE HYPERMARKETS WITH CSR AS A MEDIATOR

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Abstract
This study examines the mediating role of CSR and its influence on green marketing mix and consumer buying behavior in hypermarkets in Sharjah, United Arab Emirates. A total of 200 questionnaires were distributed to hypermarket customers, yielding a response rate of 84.5%. Data analysis was conducted using SPSS (Version 31), incorporating exploratory factor analysis (EFA) on 27 items to evaluate factor loadings, convergent validity, and internal consistency. Correlation analyses were performed to assess the strength of relationships among variables, while multiple regression and mediation analyses were employed to test the proposed hypotheses. The results indicate that the green marketing mix has a significant impact on CBB, with corporate social responsibility (CSR) partially mediating this relationship. Nonetheless, the findings are specific to the Sharjah context, as they may not be generalizable to other regions.

1. Introduction

Climate change, resource depletion, and environmental degradation are no longer distant threatsthey are urgent global challenges shaping government agendas, business strategies, and consumer behavior (Kumar, 2024). Around the world, and particularly in the United Arab Emirates (UAE), sustainability has shifted from being a corporate choice to a national priority, embedded in the UAE Vision 2031 and reinforced through ambitious environmental policies (Alkhaldi et al., 2023). In this evolving landscape, consumers are not only more informed about environmental issues but are increasingly making purchase decisions that reflect their ethical values and ecological concerns (Anwar et al., 2024).

Green marketing involves designing, producing, promoting, and delivering products and services in ways that minimise environmental harm while satisfying consumer needs (Piumali, 2023). It is not limited to sales or advertising but encompasses the full marketing mixproduct, price, place, and promotiondesigned to encourage environmentally conscious consumption (Tamim and Akter, 2024)). A well-executed green marketing mix not only addresses environmental concerns but also contributes to brand differentiation, consumer loyalty, and competitive advantage in the marketplace (Eyadat et al., 2024). In the UAE, where environmental sustainability is a key component of the national vision, green marketing is increasingly recognised as both a moral obligation and a strategic business opportunity (Sawang et al., 2024).Alongside green marketing, corporate social responsibility has emerged as a critical dimension of sustainable business practice. CSR encompasses a company's voluntary commitments to ethical operations, social development, and environmental stewardship (Alkandi, 2025). Prior studies suggest that CSR can reinforce the effectiveness of green marketing initiatives by building consumer trust, enhancing brand credibility, and fostering long-term customer relationships (Agu et al., 2024; Srivastava, 2024)). In particular, CSR may act as a mediator, strengthening the link between green marketing mix strategies and consumer buying behavior (Jabeen et al., 2023).

The retail sector in the UAE, and specifically hypermarkets, represents a unique context for examining these dynamics. Hypermarkets operate as large-scale retail environments offering diverse product ranges, including eco-friendly goods, to a wide demographic. With increasing competition and growing consumer demand for sustainable products, understanding how the green marketing mix influences buying behaviorboth directly and through CSRcan provide actionable insights for retailers aiming to align with sustainability goals (Akhtar, 2023).Although there is substantial global research on the relationship between green marketing and consumer behavior (de Oliveira Lima et al., 2024; Ahmed et al., 2023; Correia et al., 2023), limited empirical studies have explored this relationship in the context of UAE hypermarkets, particularly with CSR as a mediating factor. This study addresses this gap by investigating the direct effects of the green marketing mix on consumer buying behavior and the mediating role of CSR in this relationship. By doing so, it contributes to both theoretical understanding and practical strategies for sustainable retailing in the UAE.This study aims to investigate the direct effects of the green marketing mix componentsproduct, price, promotion, and placeon consumer buying behavior (CBB) in UAE hypermarkets, as well as to examine whether corporate social responsibility (CSR) mediates this relationship.

2. Literature Review

In recent decades, environmental sustainability has evolved from being a peripheral corporate concern to becoming a central driver of competitive advantage. Global challenges such as climate change, deforestation, and resource depletion have intensified regulatory pressures and heightened consumer awareness, creating both opportunities and challenges for organisations (Odeyemi et al., 2024). Within the United Arab Emirates, sustainability has been embedded as a national priority through frameworks such as the UAE Vision 2031, which encourages enterprises to integrate environmental responsibility into their operational and strategic practices (Alkhaldi et al., 2023). As ecological degradation increasingly shapes consumer expectations, firms are compelled to adapt their business models to align with these shifting preferences while maintaining profitability (Michalski, 2024).

Traditional marketing approaches, which primarily focused on customer satisfaction without addressing environmental consequences, are increasingly giving way to *green marketing*. This holistic approach embeds sustainability throughout the value chain, from product development to distribution, in order to minimise ecological harm and appeal to environmentally conscious consumers (Quoquab et al., 2020). Green marketing seeks to design, price, promote, and distribute products in ways that reflect environmental stewardship, which can, in turn, enhance brand loyalty, corporate reputation, and long-term competitiveness (Singh and Singh, 2025; Agu et al., 2024).

The green marketing mix, adapted from the traditional 4Ps of marketing, encompasses green product, green price, green promotion, and green place (Moravčíková et al., 2017). Each of these elements plays a critical role in shaping consumer buying behaviour (CBB), defined as the decision-making process that leads consumers to prefer environmentally friendly goods over conventional alternatives (Chen, 2024). CSR as a firm's voluntary commitment to social and environmental well-being beyond regulatory compliance has been identified as a potential mediating factor in the relationship between green marketing and CBB (Banerjee, 2025). CSR can reinforce the credibility and perceived authenticity of green marketing initiatives, thereby strengthening their influence on consumer decision-making (Larsen, 2024).

2.1 Green Product and Consumer Buying Behavior

A green product is designed to minimise adverse environmental effects throughout its life cycle by employing eco-friendly materials, reducing energy consumption, and implementing sustainable production processes (Nekmahmud, 2020). Such products often possess characteristics including recyclability, biodegradability, lower carbon emissions, and adherence to recognised environmental certifications (Abatan et al., 2024). In addition to meeting functional requirements, green products are marketed to address consumers' ethical and environmental concerns, positioning them as a strategic component of sustainable marketing.

Empirical evidence suggests that consumers with strong pro-environmental values are more likely to select green products when these are perceived as high quality, safe for health, and beneficial to the environment (Kashyap and Saraswat, 2024). Wahyuni and Zulfikar (2024) emphasised that perceived value and the authenticity of green product claims significantly influence purchase decisions, particularly in light of growing consumer scepticism towards vague or exaggerated environmental marketing. Within the UAE, the development of green products aligns with the government's sustainability objectives under the UAE Vision 2031, thereby fostering a market environment conducive to the adoption of eco-friendly goods (Alkhaldi et al., 2023). Furthermore, Akram et al. (2025) reported that consumers who believe in the genuineness of a product's environmental benefits are more inclined to pay a price premium and demonstrate long-term brand loyalty.

Several studies confirm the positive relationship between the availability of high-quality green products and consumer buying behaviour. Moorthy et al. (2023) found that physical quality, durability, and visible eco-friendly attributes significantly affect purchase intentions in retail contexts. Similarly, Santoso (2024) observed that when firms effectively communicate the environmental advantages of their products, consumer trust in the brand increases, leading to a greater likelihood of repeat purchases. Given the growing global and regional emphasis on environmental preservation and the role of green products in shaping consumer perceptions, it is anticipated that the availability and promotion of authentic green products will positively influence consumer buying decisions in the UAE hypermarket sector.

H1. Green product has a positive and significant impact on consumer buying behaviour

2.2 Green Price and Consumer Buying Behavior

Green pricing, in which firms set prices for goods and services based on their environmental attributes, is a key element of green marketing strategies. This approach aims to offset the often-higher costs of producing sustainable goods with consumers' willingness to pay a premium for environmentally responsible alternatives. Chen and Chang (2012) argue that in developing green pricing strategies, it is essential to consider factors such as target market segments, production costs, and the perceived value of environmental benefits. Transparency about the drivers of higher pricesuch as the use of sustainable materials or ethical labour practices can help persuade environmentally conscious consumers to accept premium pricing (Polonsky and Rosenberger III, 2001).

Studies have demonstrated that the willingness to pay more for green products is influenced by perceived value, trust in environmental claims, and the level of consumer environmental awareness. For example, Volschenk et al. (2022) found that consumers with stronger environmental concerns were more likely to pay a premium for products that minimise environmental damage. Acharya and Diddimani (2025) further noted that clear and transparent

communication of a product's ecological benefits can justify higher prices and increase acceptance of green pricing. Al-Msallam and Alhaddad (2023) observed that consumers in are prepared to pay more for eco-friendly goods if the brand communicates genuine and measurable environmental benefits. Fair green pricing also contributes to positioning a brand as socially responsible, which in turn enhances loyalty and repeat purchase intentions (Armas, 2023). Lopes et al. (2024) found that premium but fair pricing, combined with eco-labelling and environmental education, significantly influenced purchase decisions in developing markets. Tan et al. (2025) reported that when price reflects both product quality and sustainability, it can serve as a competitive advantage in markets with increasing environmental consciousness.

H2. Green price has a positive and significant impact on consumer buying behaviour

2.3 Green Promotion and Consumer Buying Behavior

Green promotion refers to the strategic use of marketing communications to emphasise the environmental benefits of a product or service, through tools such as eco-labelling, sustainability-focused advertising, corporate websites, social media campaigns, and in-store displays. Its purpose is to inform, persuade, and remind consumers of a product's eco-friendly attributes, thereby shaping their purchasing intentions and behaviours (Basnet et al., 2024). Effective promotion in this context not only raises awareness but also fosters favourable attitudes towards sustainable products, particularly when consumers view the claims as credible and verifiable (Chen and Chang, 2013). Credibility remains a decisive factor in determining the effectiveness of such strategies. Misleading environmental claims commonly referred to as greenwashing can severely damage consumer trust and erode brand equity (Şenyapar, 2024; Hormes, 2024). In the UAE, where sustainability forms part of national policy and consumer discourse, the use of transparent and evidence-backed promotional content has been shown to have a stronger influence on purchase decisions (Sarmah, 2024).Empirical research supports these observations; eco-labelling and targeted environmental advertising have been found to make the environmental benefits of products more tangible, enhancing purchase intentions (Abbas et al., 2024). Consistent, authentic promotional messages help build long-term trust in sustainable brands (Nguyen-Viet, 2022). In UAE hypermarkets, where multiple product categories compete for consumer attention, techniques such as dedicated "green" product shelves, in-store demonstrations, and third-party eco-certifications have proven effective in differentiating eco-friendly goods from conventional alternatives (Nguyen-Viet, 2022).

H3. Green promotion has a positive and significant impact on consumer buying behaviour

2.4 Green Place and Consumer Buying Behavior

The concept of green place encompasses distribution and placement strategies that maximise the accessibility and visibility of environmentally friendly products (Ismail, 2023). This includes decisions on supply chain design, the use of sustainable logistics, and in-store arrangements aimed at ensuring that green products are easy to find and appealingly presented (Singh and Verma, 2023). Research consistently demonstrates that ease of access plays a critical role in encouraging sustainable consumption. When eco-friendly products are placed in highly visible locations and supported by clear identification such as dedicated sustainability aisles, prime shelf positioning, or point-of-sale environmental messaging purchase likelihood increases, even among consumers less familiar with the brand (Ko et al., 2024). Strategies such as prominent shelf placement and sustainability zones have been shown to significantly boost the visibility of

green products and drive purchasing behaviour (Grimm, 2020). In the UAE hypermarket sector, strategic placement is essential given the variety of competing products. Retailers often coordinate placement with broader sustainability campaigns, positioning green products at strategic in-store locations to capture consumer attention (Balan, 2020). Convenience in locating eco-friendly products, especially when combined with transparent environmental labelling, has been found to positively affect purchase intentions (Mohd Suki, 2016; Hahnel et al., 2015).
H4. Green place has a positive and significant impact on consumer buying behaviour

2.5 Consumer Buying Behavior and CSR

Corporate social responsibility (CSR) is defined as an organisation's voluntary commitment to ethical behaviour, environmental stewardship, and social welfare that goes beyond legal requirements (Riano and Yakovleva, 2022). CSR initiatives may include environmental conservation programs, community engagement projects, fair labour practices, and ethical sourcing, all of which contribute to building a positive corporate image and fostering consumer trust (Govindan et al., 2025). A substantial body of research has identified CSR as a significant determinant of consumer buying behaviour. Studies indicate that consumers are more inclined to purchase from firms perceived as socially and environmentally responsible, particularly when CSR initiatives align with their personal values (Lee and Cho, 2019). Furthermore, CSR activities have been shown to strengthen emotional bonds between brands and consumers, leading to greater loyalty and repeat purchase intentions (Iglesias et al., 2020).

CSR is actively encouraged through government policy and has become a growing cultural expectation in the marketplace. Evidence suggests that CSR initiatives that are transparent, measurable, and integrated into a company's core strategy resonate more strongly with UAE consumers, enhancing brand equity and influencing purchase intentions (Al Efari and Mamtaz, 2023). When CSR is aligned with the green marketing mix, it can reinforce the credibility of environmental claims, reduce perceptions of greenwashing, and encourage consumers to translate favourable brand perceptions into buying decisions.
H5. Consumer buying behaviour has a positive and significant relationship with corporate social responsibility in UAE hypermarkets.

2.6 Green Marketing Mix and Consumer Buying Behavior Mediated by CSR

The green marketing mixcomprising green product, green price, green promotion, and green placecan directly shape consumer buying behaviour, but its impact can be significantly enhanced when mediated by corporate social responsibility (CSR). CSR provides an overarching framework that reinforces the authenticity of environmental initiatives, thereby increasing consumer trust and the perceived value of green marketing efforts (Nguyen-Viet, 2023). When consumers see that each element of the green marketing mix is backed by genuine CSR activities, they are more likely to believe that the company's sustainability commitments are authentic, which in turn strengthens their purchase intentions (Gong et al., 2023).

Empirical studies confirm CSR's mediating role in linking marketing initiatives to consumer behaviour outcomes. For instance, CSR initiatives have been shown to increase the persuasiveness of green marketing messages by fostering brand trust (Tan et al., 2022). Similarly, CSR acts as a credibility bridge between green marketing communications and actual purchasing behaviour, ensuring that environmental claims are perceived as sincere and ethically grounded

(Hayat et al., 2022).CSR efforts such as partnering with environmental NGOs, implementing waste reduction programmes, and running community sustainability campaigns serve as tangible demonstrations of a retailer's broader environmental and social commitments (Toledo, 2025). When these initiatives are strategically integrated with the green marketing mixsuch as promoting CSR-linked green products, pricing that supports sustainable sourcing, eco-friendly promotions, and sustainable distributionconsumers are more likely to respond positively, resulting in higher trust, loyalty, and sustainable purchasing behaviour.

H6. CSR mediates the relationship between the green marketing mix and consumer buying behaviour

3.Methodology
3.1. Measurements
A survey was conducted in two sharjah-based hypermarkets in eco-friendly products, using a structured questionnaire developed for the study. These hypermarkets were selected as they primarily attract customers interested in purchasing environmentally friendly goods. Respondents were chosen through purposive sampling, a method that selects participants based on specific eligibility criteria. To examine the influence of the green marketing mix on consumer choices and sentiments, the study targeted customers who had purchased eco-friendly items. There are four parts to the questionnaire. Information on demographics was gathered in the first part. The 13-item green marketing mix scale, covering product, price, promotion, and place, was developed by Hashem & Al-Rifai (2011). Rezai et al. (2017) designed a structured questionnaire focused on consumer buyng behavior, exploring awareness and consumption intentions and Mostafa (2007) examined constructs of CSR and their influence on consumers' buying behavior. Five Likert scale is used to evaluate all the constructs.

3.2. Participants and Instruments
The study adopts a quantitative research approach, emphasizing both data collection and statistical analysis. A survey research design was utilized to gather primary data, while secondary data were obtained from academic journals, books, and other credible publications. A total of 200 questionnaires were distributed to customers across various hypermarkets in Sharjah, United Arab Emirates, of which 169 were completed and returned, yielding a response rate of 84.5%. Participation was voluntary, and respondents were assured of complete confidentiality. The sample comprised 52% male and 48% female participants. In terms of age distribution, 45% were between 30 and 49 years old, 30.4% between 18 and 29 years old, and 24.6% between 49 and 59 years old, with 1.2% aged over 60. Regarding marital status, 66.9% were married and 28.4% single. Educational attainment included 50.9% with a master's degree, 26.6% with a PhD, and 13.6% with a bachelor's degree. Monthly income levels (in AED) indicated that 28.3% earned less than 4,000, 38.3% earned between 4,000 and 8,900, 20.6% earned between 9,000 and 14,900, and 12.8% earned above 15,000.

3.3.Data Analysis
An exploratory factor analysis (EFA) was conducted using SPSS (Version 31) on 27 measurement items, including thirteen items assessing the green marketing mix dimensions (product, price, promotion, and placement), eight items evaluating consumer buying behavior, and six items measuring corporate social responsibility (CSR). Items were retained based on factor loadings of ≥ 0.50, with results verified in both SPSS and Microsoft Excel. Convergent

validity was established as the average variance extracted (AVE) for each construct exceeded 0.50, while composite reliability (CR) values surpassed the recommended benchmark of 0.70 (Hair et al., 2010; Schumacker & Lomax, 2010). Subsequently, correlation analysis was undertaken to determine the direction and strength of relationships among the study variables. Multiple regression analysis was applied to evaluate the hypothesized effects of the green marketing mix components (independent variables) on consumer buying behavior (dependent variable). Finally, the mediating effect of CSR in the relationship between the green marketing mix and consumer buying behavior was tested using the mediation procedures outlined by Hayes (2022).

3.4. Normality

Normality was assessed using the skewness–kurtosis method in SPSS (Version 31). The results indicated that all values fell within the acceptable thresholds, as shown in Table 1. Skewness values were below the recommended cutoff of 3, and kurtosis values were below the cutoff of 8 (Byrne, 2016).

Table 1. Table of Normality

Items	Mean	Std. Deviation	Skewness	Kurtosis
Prod1	4.15	.838	-.973	.643
Prod2	4.25	.714	-.802	.745
Prod3	4.08	1.063	-1.387	1.428
Price1	4.02	.794	-.403	-.434
Price2	4.08	.751	.308	.668
Price3	3.53	1.215	.288	1.201
Place1	2.78	1.469	.220	1.711
Place2	2.74	1.503	.234	1.737
Place3	2.80	1.450	-.179	1.790
Prom1	3.72	1.091	.819	-.045
Prom2	3.91	1.036	-.717	-.606
Prom3	3.67	1.183	-.610	-.700
Prom4	3.83	.937	-.938	.656
CSR1	2.62	.557	.248	.159
CSR2	2.63	.606	.169	.158
CSR3	2.62	.608	.023	.042
CSR4	2.60	.574	.122	.070
CSR5	2.62	.524	-.122	.069
CSR6	2.59	.574	.055	-.072
CB1	3.83	.951	-.363	-.806
CB2	3.69	1.108	.441	.853
CB3	3.93	.901	-.415	-.688
CB4	3.96	1.014	-783	.015
CB5	3.88	1.036	.690	.385
CB6	3.96	.851	.400	.574
CB7	4.04	.882	.555	.526
CB8	3.73	1.077	.520	.765

3.5. Model Fitness

An exploratory factor analysis (EFA) was conducted using principal component analysis with varimax rotation. To improve model fit, certain items were removed during the refinement process. Specifically, one item from the green product scale, one item from the green promotion scale, and two items from the consumer buying behavior scale were excluded, as they loaded on factors other than their intended constructs. Item retention was guided by indicator reliability, with loadings of 0.70 or higher considered acceptable (Hair et al., 2010; Schumacker & Lomax, 2010), while items with loadings below 0.40 were removed from further analysis. The Kaiser–Meyer–Olkin (KMO) measure of sampling adequacy was 0.809, surpassing the recommended benchmark of 0.800, indicating meritorious adequacy. Bartlett's test of sphericity was statistically significant, x^2 (253) = 3366.276, $p < .001$, confirming the suitability of the data for factor analysis. The six-factor dimensions and all communalities explained 77.8% of the total variance, with all communalities exceeding the 0.50 threshold. The final factor structure, along with the retained indicator loadings, is presented in Table 2

3.5.1 Construct Reliability and Validity

The reliability and validity of the measurement model were assessed using SPSS version 28 and Excel. As shown in Table 2, all constructs have Cronbach's alpha (CA) values above the recommended threshold of 0.70 (Nunnally & Bernstein, 1994), while composite reliability (CR) values range from 0.82 to 0.95, exceeding the 0.70 benchmark (Hair et al., 2010). Convergent validity is also established, with Average Variance Extracted (AVE) values greater than 0.50 for all constructs (Fornell and Larcker, 1981). Factor loadings are generally above 0.70, with only a few items slightly lower but still within the acceptable limit of 0.50 (Hair et al., 2018; Schumacker and Lomax, 2010). The results for factor loadings, CA, CR, and AVE for green product, green price, green place, green promotion, corporate social responsibility, and consumer buying behavior are presented in Table 2.

Table 2. Factor Loading, Constructs Reliability and Convergent Validity

Constructs	Items	Factor Loading	λ^2	$1 - \lambda^2$	CA	CR	AVE
Green Product	GProduct1	.81	.66	.33	.79	.82	.70
	GProduct2	.86	.73	.26			
Green Price	GPrice1	.86	.75	.24	.77	.82	.62
	GPrice2	.88	.79	.20			
	GPrice3	.57	.33	.66			
Green Place	Place1	.78	.60	.39	.98	.84	.64
	Place2	.82	.68	.31			
	Place3	.80	.64	36			
Green Promotion	Promo1	.90	.81	.18	.83	.82	.62
	Promo3	.86	.75	.24			
	Promo4	.55	.31	.68			
CorporateSocial Responsibility	CSR1	.86	.74	.25	.94	.95	.76
	CSR2	.88	.77	.22			
	CSR3	.90	.82	.17			
	CSR4	.86	.75	.24			

	CSR5	.84	.70	.29			
	CSR6	.88	.78	.21			
ConsumerBuying Behavior	CB1	.75	.57	.42	.88	.87	.54
	CB2	.76	.58	.41			
	CB3	.72	.53	.46			
	CB4	.69	.48	.51			
	CB6	.75	.57	.43			
	CB7	.71	.50	.49			

Table 3. Discriminant Validity

Variables	Product	Price	Promotion	Place	Consumer Buying Behavior	Corporate Social Responsibility
Green Product	**.837**					
Green Price	.702**	**.791**				
Green Promotion	.434**	.517**	**.793**			
Green Place	.366**	.260**	.586**	**.802**		
CBB	.192*	.418**	.611**	.300**	**.736**	
CSR	.331**	.367**	.524**	.564**	.600**	**.874**

As presented in Table 3, the model meets the criteria for discriminant validity, with all inter-construct correlations (r) ≤0.90. The square roots of the average variance extracted (AVE) for product, price, promotion, place, consumer buying behavior (CBB), and corporate social responsibility (CSR) were 0.83, 0.79, 0.79, 0.80, 0.73, and 0.87, respectively. Each of these values exceeds the corresponding correlations with other constructs, indicating that each construct shares greater variance with its own indicators than with those of other constructs. These results confirm that the model demonstrates satisfactory discriminant validity across all measured constructs.

Table 4. Item total Pearson's correlation of all independent variables & dependent variables.

Variables	Product	Price	Promotion	Place	Consumer Buying Behavior	Corporate Social Responsibility
Product	1					
Price	.702**	1				
Promotion	.434**	.517**	1			
Place	.366**	.260**	.586**	1		
CBB	.192*	.418**	.611**	.300**	1	
CSR	.331**	.367**	.524**	.564**	.600**	1

**. Correlation is significant at the 0.01 level (2-tailed).

Table 4 illustrates that relationship between green marketing mix (product, price, promotion and placement), CBB and CSR is significant at the 0.01% level in a 2-tailed test.

4. Results

As shown in Table 5, the analysis revealed a statistically significant relationship between green product and CBB in UAE hypermarkets (b = 0.689, t = 2.53, p = 0.01), supporting H1. A strong positive association was also found between green price and CBB (b = 1.808, t = 5.95, p < 0.001), leading to the acceptance of H2. Similarly, green promotion demonstrated a significant positive relationship with CBB (b = 1.032, t = 9.964, p < 0.001), supporting H3. The relationship between green place and CBB was also significant (b = 0.675, t = 3.415, p < 0.001), resulting in the acceptance of H4. Furthermore, CBB and CSR were found to be positively correlated (b = 0.462, t = 9.697, p < 0.001), confirming H5. For all tested hypotheses, t-values exceeded the critical value of 1.96 and p-values were below the 0.05 threshold, indicating that all proposed relationships were statistically significant. The combined effect of the four green marketing mix components (product, price, promotion, and place) on CBB was also significant, $F(4, 164) = 30.643$, p < 0.001, with an R^2 value of 0.428. This suggests that 42.8% of the variance in CBB can be explained by these predictors.

Table 5. Hypothesis Testing

Hypothesis	Regression Weights	Beta Coefficient	R2	F	t-value	p-value	Hypothesis Decision
H1	Green Product→CBB	0.689	0.037	6.417	2.53	0.01	Accepted
H2	Green Price → CBB	1.808	0.175	35.426	5.95	0.001	Accepted
H3	Green Promotion → CBB	1.032	0.373	99.284	9.964	0.001	Accepted
H4	Green Place → CBB	0.675	0.065	11.661	3.415	0.001	Accepted
H5	CBB →CSR	0.462	0.36	94.027	9.697	0.001	Accepted

4.1 Mediation Analysis

The mediation analysis examined whether CSR mediates the relationship between the green marketing mix (GMM) and CBB. The total effect of GMM on CBB was positive and statistically significant (b = 0.3761, p < 0.001), indicating that GMM alone explains a meaningful portion of variance in CBB. When CSR was included in the model as a mediator, the direct effect of GMM on CBB decreased to b = 0.1356 (p = 0.03) but remained significant, suggesting that CSR partially mediates this relationship.

The indirect effect of GMM on CBB through CSR was b = 0.2405, with a 95% bootstrap confidence interval [.1577, .3354] that does not include zero, confirming the significance of the mediation pathway. The t-statistic for the direct effect was 2.1815, exceeding the critical value of 1.96, further supporting significance. These results indicate partial mediation, meaning that

GMM influences CBB both directly and indirectly through CSR. The indirect pathway accounts for a substantial portion of the total effect, highlighting CSR as an important mechanism through which green marketing initiatives drive consumer buying behavior. Therefore, Hypothesis 6 (Table 6), which proposed that CSR mediates the relationship between GMM and CBB, is supported.
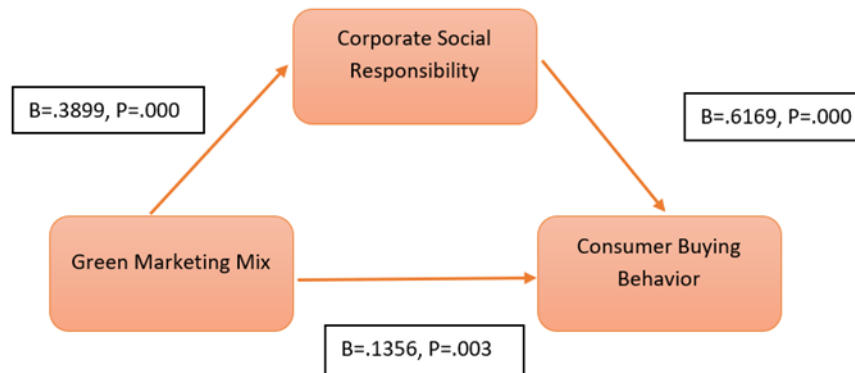

Figure 1. Mediation Model
Source: Computed by own and results are reported

Table 6. Summary of Mediation analysis

Hypothesis	Relationship	Total Effect	Direct Effect	Indirect Effect	Confidence Interval		t-statistics	Conclusion
					Lower Bound	Upper Bound		
H6	GMM → CBB → CSR	0.376	0.135	0.2405	0.1577	0.3354	2.1815	Partial Mediation

5. Discussion

The results indicated that green product and CBB are significantly correlated in UAE hypermarkets, thus supporting H1. This finding highlights the importance of sustainability-related product attributes in influencing purchase decisions. Previous studies suggest that consumers in emerging markets, including the UAE, tend to assess product quality alongside eco-friendly credentials when making purchasing choices (Aabha Basnet et al., 2024). Providing products with verifiable environmental benefitssuch as recyclable materials, reduced carbon footprints, and credible eco-certificationscan enhance brand credibility and encourage long-term loyalty (Kumar, 2024). However, in competitive retail environments where multiple products claim to be "green," differentiation may depend on combining product attributes with other elements of the marketing mix to achieve greater behavioural impact.

The findings also revealed a significant positive relationship between green price and CBB, confirming H2. This aligns with evidence that consumers are willing to pay a premium for environmentally friendly products when the price reflects both functional value and sustainability benefits (Tamim and Akter, 2024). In the UAE retail sector, competitive yet value-driven green pricing strategies act as signals of authenticity and corporate commitment to sustainability, thereby fostering both purchase intentions and brand trust (Alkhaldi et al., 2023). These results support global research indicating that transparent pricing aligned with environmental benefits can drive long-term eco-friendly purchasing patterns (Jabeen et al., 2023).

The study further found a significant association between green promotion and CBB, thereby supporting H3. Promotional approaches such as eco-labelling, sustainability-focused advertising, and in-store educational displays can effectively raise consumer awareness and stimulate purchase intentions (Anwar et al., 2024). Nonetheless, the literature on green marketing warns that promotional claims must be credible and supported by verifiable evidence to avoid the risks of greenwashing, which can erode consumer trust (Agu et al., 2024). In the UAE context, where sustainability is embedded in national policy and public discourse, consumers respond more favourably to promotional content that aligns with demonstrable corporate environmental initiatives.Green place was also shown to have a significant positive effect on CBB, supporting H4. Strategic product placementsuch as positioning eco-friendly items in high-traffic locations, creating dedicated sustainability aisles, and using clear environmental signagereduces search time, improves product visibility, and increases purchase likelihood (Chen, 2024). This is particularly relevant in hypermarkets, where accessibility can determine whether awareness of sustainable products translates into actual purchasing behaviour.

The positive relationship between CBB and CSR confirms H5. CSR initiativesranging from environmental stewardship programmes to community development projectsare perceived by consumers as indicators of organisational integrity, fostering stronger emotional bonds with brands (Santoso, 2024; Govindan et al., 2025). In the UAE, alignment of CSR activities with national sustainability priorities can further enhance brand equity and strengthen consumer loyalty.Finally, the mediation analysis confirmed that CSR partially mediates the relationship between the green marketing mix and CBB, supporting H6. This suggests that while the individual components of the green marketing mix directly influence consumer behaviour, they also exert indirect effects by shaping consumer perceptions of CSR (Alkandi, 2025). This finding is consistent with Wekesa (2024), who argues that CSR enhances trust, strengthens brand reputation, and promotes sustainable purchasing patterns. The partial mediation outcome implies that CSR amplifiesbut does not substitutethe direct effects of green product, price, promotion, and place, indicating that an integrated approach combining marketing mix strategies with CSR initiatives can produce the strongest behavioural outcomes.

6. Conclusion

This study provides clear evidence that all four dimensions of the green marketing mix green product, green price, green promotion, and green place play a decisive role in shaping consumer buying behaviour in UAE hypermarkets. Among these, green price and green promotion emerge as the most powerful drivers, underscoring that value-based pricing and credible, engaging promotional strategies often carry greater persuasive weight than product attributes alone. While

eco-friendly product quality and certifications remain important, their influence is amplified when reinforced by pricing transparency, strategic placement, and consistent promotional messaging.

The partial mediation effect of corporate social responsibility further highlights its strategic importance in sustainable retail marketing. CSR initiatives when integrated into marketing mix activities do more than enhance brand image; they provide the authenticity and trust that transform consumer interest into lasting loyalty. Yet the findings also caution that CSR is not a substitute for operational marketing actions. Pricing, promotion, and placement remain the levers that directly convert consumer goodwill into actual purchases.

For UAE hypermarkets, the managerial implication is clear: sustainable marketing impact is maximised when CSR is woven into every element of the green marketing mix, rather than positioned as a separate or peripheral activity. Linking pricing strategies, promotional campaigns, and product placement to measurable CSR outcomes creates a reinforcing cycle of credibility, trust, and consumer engagement. Theoretically, this research extends the green marketing literature by validating CSR's mediating role in the GMM–CBB framework within a Middle Eastern retail setting a context underrepresented in global scholarship. However, the cross-sectional scope limits insights into long-term behavioural shifts, and the focus on hypermarkets in Sharjah calls for broader sectoral and geographic comparisons. Future studies could address these gaps through longitudinal designs, cross-industry analyses, and the exploration of additional mediators such as environmental knowledge or brand trust.

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