

RESEARCH

Open Access



A promise or paradox? Assessing corporate social responsibility and green marketing's impact on electronic word of mouth in emerging markets

Muhammad Ikram^{1*} and Ahmed Meliani^{1,2}

Abstract

As environmental awareness increasingly shapes consumer behavior, green marketing has emerged as a strategic tool for strengthening electronic word-of-mouth (eWOM) and brand loyalty. Yet, this approach carries a paradox: While it can build trust, it also risks skepticism if perceived as greenwashing. This study examines the role of corporate social responsibility (CSR) as a mediator and consumer factors environmental values and attitudes toward green products as moderators in the relationship between green marketing, loyalty, and eWOM. Using survey data from 278 North African consumers, structural equation modeling (SEM) reveals that green marketing initiatives significantly enhance brand loyalty and eWOM, with CSR playing a pivotal mediating role. Consumer environmental values strengthen the impact of green marketing on brand loyalty, though they do not affect eWOM, while attitudes toward green products show no significant moderating effect. These findings highlight the need for authentic CSR integration to ensure green marketing fulfills its promise rather than reinforcing skepticism. By offering empirical insights from North Africa, an underexplored emerging market, this research advances understanding of the dynamics between green marketing, CSR, and sustainable consumer behavior.

Keywords Corporate social responsibility, Emerging markets, Green marketing, Electronic word of mouth, Paradox, Green washing

Introduction

The evolving consumer market worldwide, characterized by increasing environmental awareness and digital engagement [1, 2], provides a unique opportunity to investigate the convergence of green marketing, brand loyalty, and electronic word-of-mouth (eWOM). The relevance of green marketing has increased dramatically

as consumers become more environmentally friendly (Alkhatib et al. 2023), influencing their purchasing decisions and brand preferences. This trend necessitates a better comprehension of how green marketing can shape consumer attitudes and actions, particularly in emerging markets such as those in North African countries.

The promotion of environmentally friendly impacting products or services is referred to as green marketing. It involves integrating sustainability ideas into a variety of marketing-related areas, including promotion, packaging, messaging, and product design (Shopify [3]). Green marketing refers to the development and promotion of products on the basis of their actual or perceived environmental sustainability [4]. Watson et al. (2024) provide an evidence that authentic eco-friendly branding can

*Correspondence:

Muhammad Ikram
i.muhammad@aui.ma

¹ School of Business Administration, Al Akhawayn University, Ifrane, Morocco

² Sidi Mohammed Ben Abdellah University (USMBA), The ERMOT Laboratory, Faculty of Legal, Economic and Social Science, Fes, Morocco

significantly enhance customer loyalty in practice, complementing the theoretical expectation. As Yadav et al. [5] noted, green marketing refers to marketing strategies that emphasize environmentally friendly goods and procedures. In sectors such as the hotel industry, green practices greatly enhance a positive corporate image and match consumer tastes.

A pivotal concept in consumer behavior, brand loyalty is the customer's repeated choice of one brand over its rivals. This devotion to the brand is a deep emotional bond and commitment as well as a habit of making repeated purchases. Brand loyalty takes on a complex dimension in the context of green marketing [6]. Particularly in this context, these elements are connected to a brand's environmental initiatives. Lin et al. [7] emphasize that satisfaction, perceived value, and emotional connection all affect brand loyalty. Chen et al. [8] reported that greenwashing has an effect on customer behavior. It emphasizes how vital real green marketing is to create brand loyalty.

Most prior studies have focused on developed markets, often overlooking cultural, economic, and social implications that characterize consumer behavior in developing regions. North Africa's markets are relatively under-researched in this domain; consumers in this region may respond differently to sustainability initiatives due to distinct cultural values, levels of skepticism, and varying exposure to global green trends. Moreover, there is limited insight into the application of the theory of planned behavior (TPB) in explaining green marketing outcomes in such markets. TPB posits that behavior is driven by attitudes, subjective norms, and perceived behavioral control [9]. Moreover, consumer predispositions such as pro-environmental values and positive attitudes toward green products could shape or moderate the effectiveness of green marketing. Prior studies suggest that environmentally conscious consumers show stronger loyalty to brands aligned with their values [10] and that favorable attitudes toward green products encourage supportive behaviors. However, it remains unknown whether these factors amplify the influence of green marketing initiatives or if, conversely, a gap exists between having a green attitude and taking action. These gaps define the core problem this research addresses. Moreover, eWOM is the term for the digital platform-based exchange of views, experiences, and product or service information. With consumers depending so much on social media and internet reviews to make purchases in the digital age, the importance of such purchases has increased [11].

Although developed markets have seen a great deal of research on green marketing, brand loyalty, and eWOM, North African consumer markets have seen relatively

little of this type of research. Most existing studies ignore the particular cultural, economic, and social nuances found in emerging markets such as North Africa. In particular, concerning green marketing, the theory of planned behavior (TPB) application within this context has not been fully investigated. It is also yet unknown how CSR mediates the connections between green marketing initiatives and consumer outcomes such as brand loyalty and eWOM. A complete overview of the mechanisms at work requires an understanding of how CSR efforts connect green marketing initiatives with consumer responses.

This study develops the following questions to analyze how brand loyalty and eWOM in North African markets are examined in relation to green marketing.

Q 1: How are brand loyalty and consumer perceptions affected by green marketing initiatives?

Q 2: How eWOM affects how customers feel and behave toward environmentally friendly brands?

Q 3: How does CSR mediate the link between green marketing initiatives and consumer outcomes, including brand loyalty and eWOM?

The contribution of this study fills the gap in literature by offering novel insights focusing sustainable consumer behavior and effectiveness of green marketing initiatives in North Africa. Emphasizing this regional novelty is important: North Africa's emerging economies are experiencing a wave of environmental consciousness and digital engagement, yet consumer trust in corporate claims may be fragile. Our findings contribute to the literature by shedding light on how sustainable marketing strategies play out in a developing/underdeveloped countries context, expanding the geographical applicability of theories like TPB. The study also makes a theoretical contribution by integrating TPB into the green marketing framework. We illustrate how attitudes shape consumer receptivity to green messages, and we evaluate CSR as a mediating force that connects marketing efforts to behavioral outcomes. In terms of practical impact, the research provides marketers and policymakers with actionable insights on crafting effective green marketing and CSR strategies tailored to emerging markets. By highlighting the conditions under which green marketing succeeds or fails in North Africa. This study provides insights that businesses navigate the promise-paradox of green marketing fulfilling consumers' sustainability expectations without triggering skepticism. This study addresses critical knowledge gaps and offers culturally informed guidance, thereby enriching the global discourse on sustainable consumer behavior. By focusing on North Africa, our research not only addresses this regional gap but also allows a contrast with earlier

findings, highlighting how the same green marketing strategies might yield different outcomes in an emerging market setting. This novel regional lens adds significance to our study, as it provides insights tailored to North African countries and enriches the global discourse on sustainable marketing in diverse markets.

The remainder of the paper is organized as follows: Sect. "Literature review" represents the literature review and hypotheses development. We outline the methodology in Sect. "Methodology", present the results in Sect. "Results", and then discuss theoretical and managerial implications in Sect. "Discussion and implications". The last section presents the conclusions and limitations of study.

Literature review

Theory of planned behavior (theoretical perspective)

The theory of reasoned action served as the groundwork for the later theory of planned behavior (TPB), which was developed to better predict and comprehend human behavior in specific circumstances. The relevance of the TPB in the social and behavioral sciences is suggested by its application in various fields, such as environmental science, business, management, and health sciences [9, 12].

Human behavior is determined by three primary factors, as outlined in the theory of planned behavior (TPB): normative beliefs that generate perceived societal pressure or social expectations; behavioral beliefs, which determine an individual's behavioral disposition toward a behavior; and control beliefs, which affect perceived control over the behavior or self-efficacy regarding how it is carried out [9].

The TPB plays a critical role in marketing research by helping in understanding how attitudes, subjective norms, and perceived control affect consumer decisions. Its applicability in comprehending student binge drinking behavior within a social identity framework was investigated by Willis et al. [13]. The application of the TPB in green marketing research includes the study of energy-saving behaviors. Canova and Manganello [14] demonstrated that incorporating habits into the TPB model enhanced its predictive accuracy for energy-saving actions such as turning off lights and unplugging electronic devices. La Barbera and Ajzen [15] discussed how perceived behavioral control within the TPB modulates the impact of attitudes and subjective norms, which is essential for understanding consumer behavior in green marketing. Moreover, Caputo [16] examined teenage alcohol use by integrating the TPB with the prototype-willingness model, highlighting the significance of attitudes and subjective norms.

Development of hypotheses and the conceptual framework

Impact of green marketing initiatives

The development area of green marketing has a large influence on brand loyalty and eWOM, as many academic contributions have shown. Javed et al. [17] reported that altruism moderates and that engagement behavior mediates the impact of green love marks on brand loyalty. Additionally, Lin et al. [7] discovered that brand loyalty is greatly enhanced by the way in which consumers perceive the functional and emotional advantages connected to green brands. The impact of green marketing initiatives on eWOM is notably influenced by the credibility of the sources endorsing these initiatives. According to the study by Mim et al. [18], initiatives that incorporate endorsements from credible sources such as the environmental protection agency (EPA) and well-known social media influencers are shown to significantly enhance consumer trust and brand attachment. These elements are crucial for triggering eWOM, highlighting the critical role of well-executed green marketing initiatives in promoting consumer advocacy online.

H1: Green marketing initiatives positively influence brand loyalty.

H2: Green marketing initiatives positively influence eWOM.

Influence of CSR

Ahmad et al. [19] show that corporate social responsibility (CSR) content shared on social media can influence consumer advocacy and eWOM in the hotel industry, where positive CSR messaging leads to favorable eWOM. Lee and Chen (2019) delve into the cosmetics industry, highlighting how transparency in green attributes and CSR initiatives can effectively influence consumer willingness to advocate for green products, thereby bolstering eWOM. CSR is increasingly recognized as a key element in improving brand loyalty through its mediating function in green marketing initiatives. Moreover, Agye-mang and Ansong. (2021) investigated the impact of consumers' perceptions of a firm's ethicality on brand loyalty, with corporate social responsibility and green marketing acting as mediating variables. The results indicate that although CSR and green marketing can strengthen brand loyalty, they may also generate consumer skepticism when seen disingenuous, underscoring the CSR paradox [41].

According to research by Araújo et al. [20], CSR strategies improve brand equity and image while also having a large effect on consumer satisfaction, which affects brand loyalty. According to these findings, strategic CSR activities that align with consumer values and expectations

can amplify the impact of green marketing initiatives on brand loyalty. Moreover, Barlas et al. (2023) suggest even more that trust is an essential mediator between CSR and loyalty.

H3: CSR mediates the relationship between green marketing initiatives and brand loyalty.

H4: CSR mediates the relationship between green marketing initiatives and eWOM.

Consumer environmental values and attitudes toward green products

According to previous studies, both attitudes toward green products and the environmental values of consumers have a large effect on how much green marketing affects brand loyalty. According to Sirgy (1982), who observes that customers are drawn to goods that strengthen their sense of self, those who have environmental value are more loyal to eco-friendly brands. Furthermore, positive attitudes toward green products can enhance the efficacy of green marketing, as shown by the theory of reasoned action and the TPB [21], which show that attitudes significantly predict consumer behaviors. According to Keller (1993), brand loyalty is much increased by powerful, positive brand associations that are strengthened by efficient green marketing. Moreover, Lutz (1991) described how attitudes act as filters to affect how marketing messages are received, therefore, successful green marketing that corresponds with favorable views about green products may result in greater brand loyalty. All these viewpoints point to the need to moderate the impact of green marketing campaigns on brand loyalty by considering attitudes toward eco-friendly products and their environmental value. The intricate dynamics between green marketing initiatives and consumer involvement, especially eWOM, are highlighted by a recent empirical study. These tactics include sustainability-focused branding, ecolabeling, and green packaging. Both consumer environmental attitudes and green brand image moderate their effects. The empirical results from the paper by Yang and Chai [22] also show that awareness of environmental issues and perceived effectiveness can impact and change the effect of green marketing on eWOM. This demonstrates that consumers' perceptions of both symbolic and substantive green marketing initiatives, influenced by their underlying values and attitudes, directly influence the volume and positivity of eWOM.

Building on the above literature, we propose that consumers' environmental values and green product attitudes will moderate the impact of green marketing; however, this relationship may be refined [23]. Consumers with strong environmental values are generally

more loyal to brands aligning with their ecological beliefs, which suggests that higher environmental values should amplify the positive effect of green marketing on brand loyalty and eWOM.

H5a: Consumer environmental values moderate the relationship between green marketing initiatives and brand loyalty.

H5b: Consumer environmental values moderate the relationship between green marketing initiatives and eWOM.

In line with the TPB, a consumer's attitude toward a behavior is a key determinant of their intention and actions [9]. Consumers who hold very positive attitudes about eco-friendly products are likely to be more receptive to green marketing, which should in turn increase their loyalty and advocacy behaviors. Thus, it is plausible that attitude toward green products amplifies the effectiveness of green marketing on brand loyalty and eWOM, serving as a moderating influence [24].

H6a: Attitude toward green products moderates the relationship between green marketing initiatives and brand loyalty.

H6b: Attitudes toward green products moderate the relationship between green marketing initiatives and eWOM.

This study fills a gap in the literature on how CSR mediates the connection among green marketing initiatives and both brand loyalty and eWOM. It is important to understand this link since CSR initiatives may increase consumer perceptions of the brand's dedication to sustainability, therefore amplifying the benefits of green marketing initiatives. To close this gap and offer a more comprehensive insights of the processes at work, this study investigates how CSR activities might connect green marketing initiatives with customer reactions.

Figure 1 presents conceptual framework proposed in this study. Each component of the TPB is mapped onto the key variables of this study, ensuring the model is theoretically grounded. Attitudes are represented by consumers' attitudes toward green products (ATGP), which we posit will shape how strongly they respond to green marketing efforts reflecting TPB's premise that favorable attitudes lead to supportive intentions and behaviors. Subjective norms find their parallel in the social dimensions of our model: For instance, a company's visible CSR initiatives and the ensuing eWOM create a social climate that can pressure or encourage consumers to advocate for the brand. Though we did not directly measure perceived behavioral control, we acknowledge its role in the background consumers are more likely to act share eWOM or remain loyal when

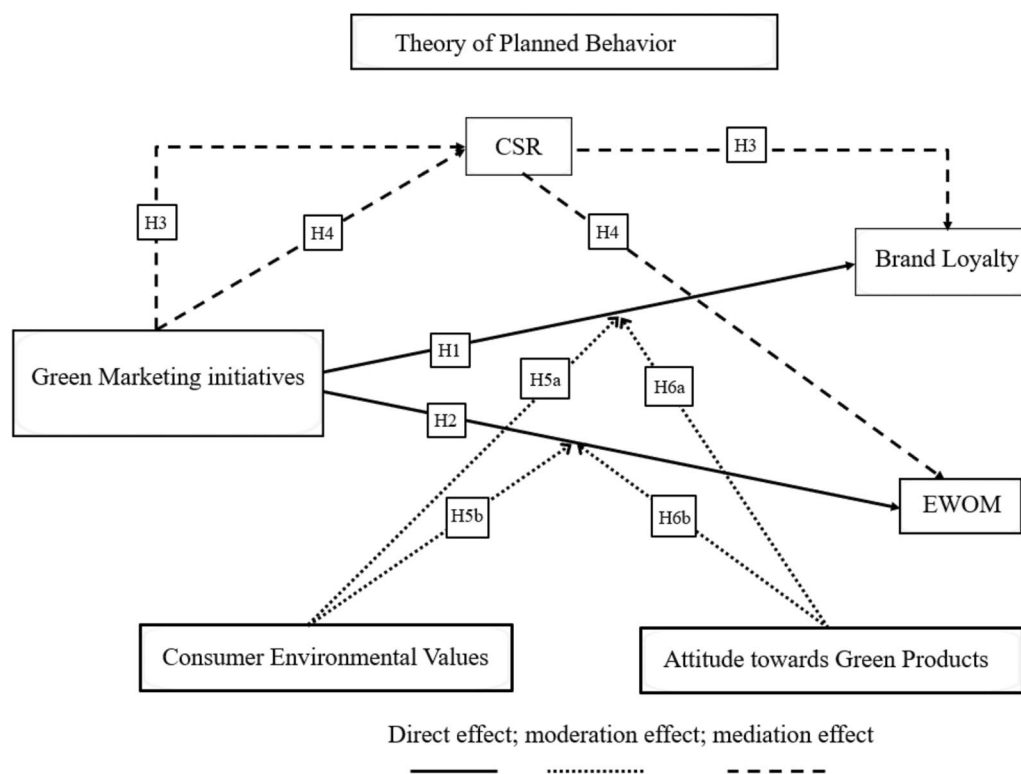


Fig. 1 Conceptual framework

they feel capable of making a difference or that their actions have efficacy.

Methodology

Data

This research uses a questionnaire survey approach to validate the research framework and hypotheses. This study's unit of analysis is the consumer level, with a focus on individuals in North Africa. The study examines consumers who purchased eco-friendly products or services in North African nations, including Morocco, Tunisia, Egypt, Algeria, Libya, and Sudan. In this study, primary data are critical for assessing the influence of green marketing strategies on eWOM as well as brand loyalty. We used a mixed sampling method to ensure a complete and representative sample. We contacted some participants directly via email and social media, while others were approached through green products and green marketing-related social media groups in each study nation. This method enables both targeted and broad data collection by combining elements of random and targeted sampling via social media platforms. With groups accessible for every country in the study, we emailed and posted a structured questionnaire to participants on social media. We distributed 450 surveys between April and

May 2024, and 278 of these yielded useful answers, or 61.8% of the total. The suggested model was assessed via statistical data analysis.

In selecting social media groups for survey distribution, we purposefully targeted communities in each country that were active in discussions of sustainability and green consumerism. We identified popular Facebook™ and LinkedIn™ groups focused on eco-friendly products or environmental issues in North Africa. We chose groups that had diverse memberships in terms of age, gender, and profession to improve the breadth of our outreach and reduce selection bias. To enhance representativeness, we combined this targeted approach with broad outreach: In addition to posting in interest-specific groups, we also shared the survey link on general community forums and through personal networks across the region. This mixed sampling strategy was designed to capture a wide cross section of North African consumers, not just those deeply engaged in green activism.

Given that our data on predictors and outcomes were collected from the same survey instrument, we took steps to mitigate common method bias (CMB). Procedurally, respondents were assured anonymity, and we carefully constructed the questionnaire to reduce evaluation apprehension and item context effects. Statistically, we conducted Harman's single-factor test, which showed

that no single factor accounted for a dominant share of variance the largest single factor explained only 34%, well below the 50% threshold. This indicates that CMB is unlikely to confound the results [25]. We also checked for item inter-correlations and did not observe any abnormally high values, providing further confidence that CMB does not pose a serious concern in our study.

Measurement items

Our methodology is precise and uses credible construct items derived from previous literature to revise and develop the initial scale measurements. The items for measuring brand loyalty mentioned adapted from Xu [26]. Xu's research focused on understanding CSR from the viewpoint of Chinese diners. The study provides robust measures for assessing brand loyalty regarding environmentally friendly brands. The measurement items for CSR image mentioned in Lee & Chen (2019) are sourced from Alcañiz et al. [27]. This study explores the effects of corporate credibility on the perception of social responsibility, providing a solid foundation for evaluating how brands are perceived in terms of their social and environmental responsibilities. The items related to green marketing mentioned in Yadav et al. [5] are adapted from Ko et al. [28] and Karaosmanoglu and Melewar [29]. Ko et al. focus on how green marketing plays a role in establishing business image within the retail environment, whereas Karaosmanoglu and Melewar's work addresses corporate communications,

identity, and image. These sources offer comprehensive measures for assessing various aspects of green marketing initiatives. The eWOM measurement items are adapted from Samosir et al. (2023). This research examines the influence of social media marketing and brand equity on eWOM in Indonesia, providing relevant and contemporary measures for evaluating eWOM within the framework of green marketing. The items for measuring consumer environmental values mentioned in Butt et al. (2016) are adopted from Maloney and Ward [30]. Their scale for measuring ecological attitudes and understanding provides reliable items for assessing consumers' environmental consciousness and values. The measurement items for attitudes toward green products mentioned in Butt et al. (2016) are adapted from Conner et al. [31] and Kim and Chung [32], with 3 items each. Conner et al. examine the cognitive mediation of prior behavior related to alcohol consumption, whereas Kim and Chung focus on consumer purchasing intentions related to natural personal care products. Both sources offer valuable insights for measuring consumer attitudes toward environmentally friendly products. The survey was split into two parts, one including demographic information. The other, which comprises measuring items connected to the research variables, is shown in Table 1. The items on the scale were evaluated with a 5-point Likert scale. I strongly agree with (5) and strongly disagreed with (1).

To improve clarity, we refined several survey items by providing concrete examples or standards for otherwise

Table 1 Constructs and measurement items

Constructs	Measurement items
Green marketing initiatives (GM)	• The services provided by this brand are eco-friendly • This brand uses products that have recognized environmental certification, e.g., ISO 14001 certification • This brand is involved in energy conservation • The advertisements of this brand reflect its green image • The public relation activities of this brand reflect its green image • The sales promotions offered by this brand reflect the green image
Brand loyalty (BL)	• I think I am loyal to this brand • I intend to continue buying this brand because it is environmentally friendly • I often recommend this brand to my friends and relatives • I will continue to recommend this brand
Electronic word of mouth (eWOM)	• Compared to other brands, I mention this one the most • After viewing this brand's social media during significant events, I felt at ease using their services • If my friends need to choose, I advise them to pick this brand over others • I take pride in mentioning to others that I use this brand
Corporate social responsibility (CSR)	• I think that this brand acts with society's interest in mind • This brand is aware of environmental matters • This brand acts in a socially responsible way
Attitude toward green products (ATGP)	• Buying environmentally friendly products makes me feel good • I love it when environmentally friendly brands are available for the product category I purchase • For most product categories, the best buy is usually the environmentally friendly brand
Consumer environmental values (CEV)	• When I think of the ways industries are polluting the environment, I get frustrated and angry • I become irritated when I think about the harm being done to plant and animal life by pollution • I would be willing to stop buying products from companies guilty of polluting the environment

broad statements. For instance, one original item under Green Marketing Initiatives (GM) stated that this brand uses products which are certified with green labels. We adjusted this brand uses products that have recognized environmental certifications, e.g., International Organization for Standardization (ISO) 14,001. By mentioning ISO 14001 respondents can better grasp what qualifies as a green label in this context. These clarifications follow best practices in survey design by reducing ambiguity and aligning the item wording with common environmental standards, thereby enhancing the precision of our measurements without altering their underlying meaning.

Profile of the respondents

The profiles of the participants are presented in Table 2. The participants in the survey were 47.8% female and 52.2% male. The age group between 18 and 25 years old received the highest participation rate of 50%, followed by 26 to 30 years old (26.3%). A total of 3.6% of the

participants were under the age of eighteen, 14.7% were between the ages of thirty-one and forty-seven, and 5.4% were over forty-one. Geographically speaking, Morocco accounted for the majority of the responses (52.2%), with Egypt accounting for the second highest percentage (15.5%). The remaining participants were from Algeria (10.07%), Libya (6.47%), Sudan (5.8%), and Tunisia (7.9%). In terms of income, 42.1% of the participants stated that they earned between \$500 and \$1000 a month. A total of 15.5% of the sample's income was less than \$500 per month, 19.4% was between \$1000 and \$2000 per month, 9.7% was between \$2000 and \$4000 per month, and 13.3% was more than \$4000 per month.

Structural equation modeling (SEM)

To rigorously examine the suggested relationships among green marketing initiatives, brand loyalty, and eWOM while considering the mediating role of CSR and the moderating effects of consumer environmental values and attitudes toward green products, we employed SEM. According to Hair et al. [33], SEM is a comprehensive multivariate statistical technique that examines complex causal relationships between observed and latent variables via multiple regression. Since mediation and moderation effects are essential to our research framework, we chose SEM because of its capacity to concurrently model multiple relationships. When consumer-related and corporate social responsibility considerations are combined, this method produces a thorough analysis that helps us make more accurate conclusions about how green marketing affects brand loyalty and eWOM.

Results

A thorough analysis and study results are presented in this section. We carried out a comprehensive data analysis via SmartPLS4. Descriptive statistics, multicollinearity tests, collinearity statistics, analysis of measurement models, estimations of discriminant validity, and the results of hypothesis testing are among the findings.

Table 2 Respondent demographic profiles

Variables	Categories	N	%
Gender	Male	145	52.2
	Female	133	47.8
Age	< 18 years old	10	3.6
	18–25 years old	139	50
	26–30 years old	73	26.3
	31–40 years old	41	14.7
	> 41 years old	15	5.4
Country	Morocco	151	54.31
	Algeria	28	10.07
	Egypt	43	15.47
	Libya	18	6.47
	Sudan	16	5.8
	Tunisia	22	7.9
Income	Less than \$500 per month	43	15.5
	\$500—\$1000 per month	117	42.1
	\$1000—\$2000 per month	54	19.4
	\$2000—\$4000 per month	27	9.7
	More than \$4000 per month	37	13.3

Table 3 Descriptive statistics (N = 278)

Latent variables	mean	std, deviation	skewness	std, error	Kurtosis	std, error
GM	3.745803	0.823	− 1.34	0.626902	1.161	0.323621
BL	3.657374	0.769869	− 1.03	0.236501	0.615	0.543821
eWOM	3.598022	0.780554	− 0.45	0.196957	− 0.65	0.623520
CSR	3.690647	0.857837	− 0.97	0.146911	0.746	0.298382
CEV	3.758993	0.953738	− 0.7	0.146282	− 0.46	0.443310
ATGP	3.767386	0.849392	− 0.77	0.850092	0.031	0.284521

Descriptive analysis

Table 3 presents descriptive statistics, such as the mean, standard deviation, skewness, kurtosis, and corresponding standard errors. According to the data, the ATGP construct had the greatest mean score ($M=3.77$, $SD=0.849$). In contrast, the "electronic word-of-mouth" (eWOM) construct recorded the lowest mean value ($M=3.60$, $SD=0.781$) of all the measured constructs.

This pattern indicates that respondents express very favorable attitudes toward green products yet are comparatively less vigorous in engaging in eWOM. In other words, our sample on average "strongly agrees" that they like or approve of eco-friendly products, hence the high ATGP mean even more than they actively promote or discuss those products online which reflected in the lower eWOM mean. Prior research on younger generations supports this idea, finding that even environmentally conscious youth engage relatively less in online discussions of sustainability than expected [34]

Test of multicollinearity

The accuracy of the results obtained from multivariate analysis might be affected by multicollinearity.

Table 4 Collinearity statistics

Variables	Elements	Collinearity statistics			
		Tolerance	VIF	Tolerance (mean)	VIF (mean)
ATG	ATGP1	0.597729	1.673	0.636413	1.574333
	ATGP2	0.659196	1.517	–	–
	ATGP3	0.652316	1.533	–	–
BL	BL1	0.553097	1.808	0.62012	1.62875
	BL2	0.589623	1.696	–	–
	BL3	0.724638	1.380	–	–
	BL4	0.613121	1.631	–	–
CEV	CEV1	0.501002	1.996	0.505974	1.986667
	CEV2	0.553097	1.808	–	–
	CEV3	0.463822	2.156	–	–
CSR	CSR1	0.565611	1.768	0.632488	1.597333
	CSR2	0.720981	1.387	–	–
	CSR3	0.610874	1.637	–	–
eWOM	eWOM1	0.693963	1.441	0.655798	1.52825
	eWOM2	0.617665	1.619	–	–
	eWOM3	0.634518	1.576	–	–
	eWOM4	0.677048	1.477	–	–
GM	GM1	0.420168	2.380	0.447342	2.3165
	GM2	0.576037	1.736	–	–
	GM3	0.353982	2.825	–	–
	GM4	0.341763	2.926	–	–
	GM5	0.493097	2.028	–	–
	GM6	0.499002	2.004	–	–

Tolerance values and variance inflation factor (VIF) data were analyzed to address this problem. All tolerance levels exceeded 0.10, and all the VIF values were less than 3, as shown in Table 4, which complies with the suggested limits [33]. To be more precise, the lowest tolerance value was 0.447342 for GM, indicating the highest but still acceptable level of multicollinearity, and the best tolerance value was 0.655798 for eWOM, indicating the least amount of multicollinearity. In a similar vein, GM had the greatest VIF value at 2.3165, whereas eWOM had the lowest at 1.52825. This finding indicates that multicollinearity is not a substantial issue for the study's independent variables, supporting the dependability of the regression analysis. Before proceeding to hypothesis tests, we examined the correlation between the two moderator constructs CEV and ATGP to ensure they are related yet distinct dimensions. As expected, CEV and ATGP showed a positive correlation, since consumers who place high value on the environment often also report favorable attitudes toward green products. Importantly, this correlation was of moderate magnitude and within acceptable limits. The variance inflation factors (VIFs) for these predictors were well below critical thresholds (all $VIF < 3$) and tolerance values above 0.10, indicating that multicollinearity is not a serious concern in our model.

Measurement model analysis

Reliability and validity

The measurement model analysis assessed validity in both convergent and discriminant ways. To evaluate convergent validity, factor loadings and average variance extracted (AVE) were utilized. The acceptable standard for convergent validity was met by all factor loadings, as indicated in Table 5, which exceeded 0.70, and all AVE values, which were over 0.50 [33]. In particular, strong indicators for each construct were indicated by factor loadings. Internal consistency was ensured by reliability, as demonstrated by Cronbach's alpha and composite reliability results exceeding the 0.70 threshold. While CSR had the lowest Cronbach's alpha at 0.760, which was still above the acceptable level, GM had the highest at 0.874, indicating excellent reliability. The construct reliability was further indicated by composite reliability, which varied from 0.852 for eWOM to 0.905 for GM. As a result, the model demonstrates strong validity and reliability, which reinforces its robustness.

Using the heterotrait–monotrait ratio of correlations (HTMT), we evaluated discriminant validity. Henseler et al. (2015) advocated this approach, which has been applied extensively in recent studies to evaluate discriminant validity within partial least squares structural

Table 5 Construct reliability and validity

Constructs	Items	Factor loadings	Cronbach's alpha	Composite reliability	AVE
ATGP	ATGP1	0.843	0.767	0.865	0.682
	ATGP2	0.796			
	ATGP3	0.837			
BL	BL1	0.838	0.794	0.866	0.619
	BL2	0.796			
	BL3	0.708			
	BL4	0.799			
CEV	CEV1	0.884	0.837	0.901	0.753
	CEV2	0.828			
	CEV3	0.891			
CSR	CSR1	0.861	0.760	0.862	0.677
	CSR2	0.755			
	CSR3	0.847			
eWOM	eWOM1	0.732	0.768	0.852	0.590
	eWOM2	0.792			
	eWOM3	0.795			
	eWOM4	0.751			
GM	GM1	0.736	0.874	0.905	0.615
	GM2	0.740			
	GM3	0.819			
	GM4	0.833			
	GM5	0.798			
	GM6	0.776			

Table 6 Discriminant validity

	ATGP	BL	CEV	CSR	eWOM	GM	CEV x GM	ATGP x GM
ATGP								
BL	0.717	–	–	–	–	–	–	–
CEV	0.670	0.647	–	–	–	–	–	–
CSR	0.829	0.801	0.667	–	–	–	–	–
eWOM	0.627	0.625	0.835	0.744	–	–	–	–
GM	0.704	0.840	0.843	0.831	0.811	–	–	–
CEV x GM	0.584	0.725	0.583	0.667	0.620	0.777	–	–
ATGP x GM	0.550	0.658	0.534	0.658	0.578	0.704	0.756	–

equation modeling. Table 6 shows that each of the HTMT values falls under the 0.9 criterion.

We opted to use the HTMT criterion instead of the traditional Fornell–Larcker criterion because a recent study conducted by Dirgiamto, [35] showed that HTMT is more sensitive and reliable in detecting discriminant validity. In fact, Henseler et al. (2015) demonstrated that HTMT outperforms the Fornell–Larcker approach, which can falsely indicate discriminant validity due to its overly liberal nature. By applying the more stringent

HTMT < 0.90 threshold, we ensure a rigorous assessment of discriminant validity for our constructs.

Structural equation modeling results

As mentioned previously, the analysis indicated that the VIF values are under the accepted threshold of 3, supporting that multicollinearity was not an issue in this research. This allows for a confident evaluation of the relationships within the structural model. Figures 2 and 3 show diagrams of the SEM analysis findings without employing the bootstrapping approach (Fig. 2) and with

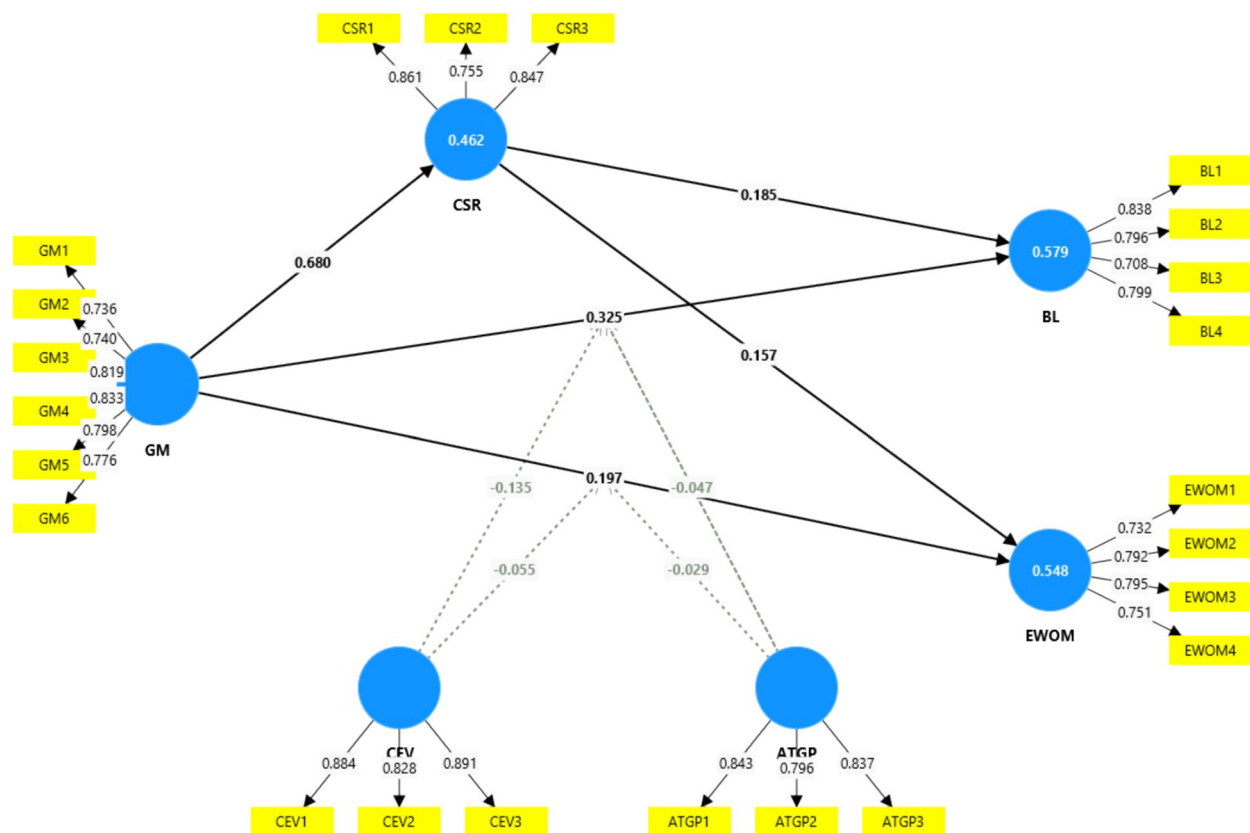


Fig. 2 Measurement model diagram (without applying the bootstrapping technique)

the bootstrapping approach applied (Fig. 3). Model estimation using a subsample of 5000 was utilized in the structural model analysis. Table 7 presents the main findings in detail, comprising paths, beta coefficients, *t* statistics, and *p* values. To provide a thorough understanding of the model's performance, the results of the *R*-squared and model fit indicators were computed. The model does a good job of explaining brand loyalty, CSR, and eWOM, as evidenced by the *R*-squared values of 0.579, 0.462, and 0.548, respectively. In addition, model fitness metrics such as the NFI and SRMR were applied. According to Byrne [36], the outcomes revealed an NFI value of 0.699, which is less than the intended 0.90 threshold, and an SRMR score of 0.076, which is under the 0.09 criterion.

The results of the hypothesis testing indicated that most of the projected pathways were statistically significant and positive, except for three paths that were not supported. The influence of green marketing initiatives on brand loyalty was substantial ($\beta = 0.325$, $p < 0.000$), suggesting that a 1-unit increase in green marketing initiatives would result in a 0.325 unit increase in brand loyalty, with other factors held constant. Therefore, H1 is accepted. eWOM was also positively impacted by green marketing strategies ($\beta = 0.197$, $p = 0.015$). This finding

supports H2. The bootstrapping analysis reinforces these findings, with the importance of CSR in these connections shown by the considerable mediating influence it has on both types of brand loyalty. For brand loyalty, the specific indirect effect through CSR was significant ($\beta = 0.126$, $p = 0.004$, $20\% \leq \text{VAF} = 28\% \leq 80\%$), with the total effect of GM on brand loyalty being 0.450. Similarly, for eWOM, CSR mediated a significant portion of the effect ($\beta = 0.107$, $p = 0.033$, $20\% \leq \text{VAF} = 35.2\% \leq 80\%$), where the total effect of GM on eWOM was 0.304. Therefore, H3 and H4 are supported. Regarding the moderating effects, the interaction between consumer environmental values and green marketing initiatives significantly influenced brand loyalty ($\beta = -0.135$, $p = 0.015$), suggesting that higher environmental values might decrease the positive effects of green marketing initiatives on brand loyalty. Therefore, H5a is supported. In contrast, eWOM did not significantly benefit from this moderating effect ($\beta = -0.055$, $p = 0.218$). Similarly, there was no evidence to support the moderating impact of attitudes toward green products on the associations among green marketing initiatives and eWOM ($\beta = -0.029$, $p = 0.511$) or brand loyalty ($\beta = -0.047$, $p = 0.288$). Therefore, H5b, H6a and H6b are not supported. These

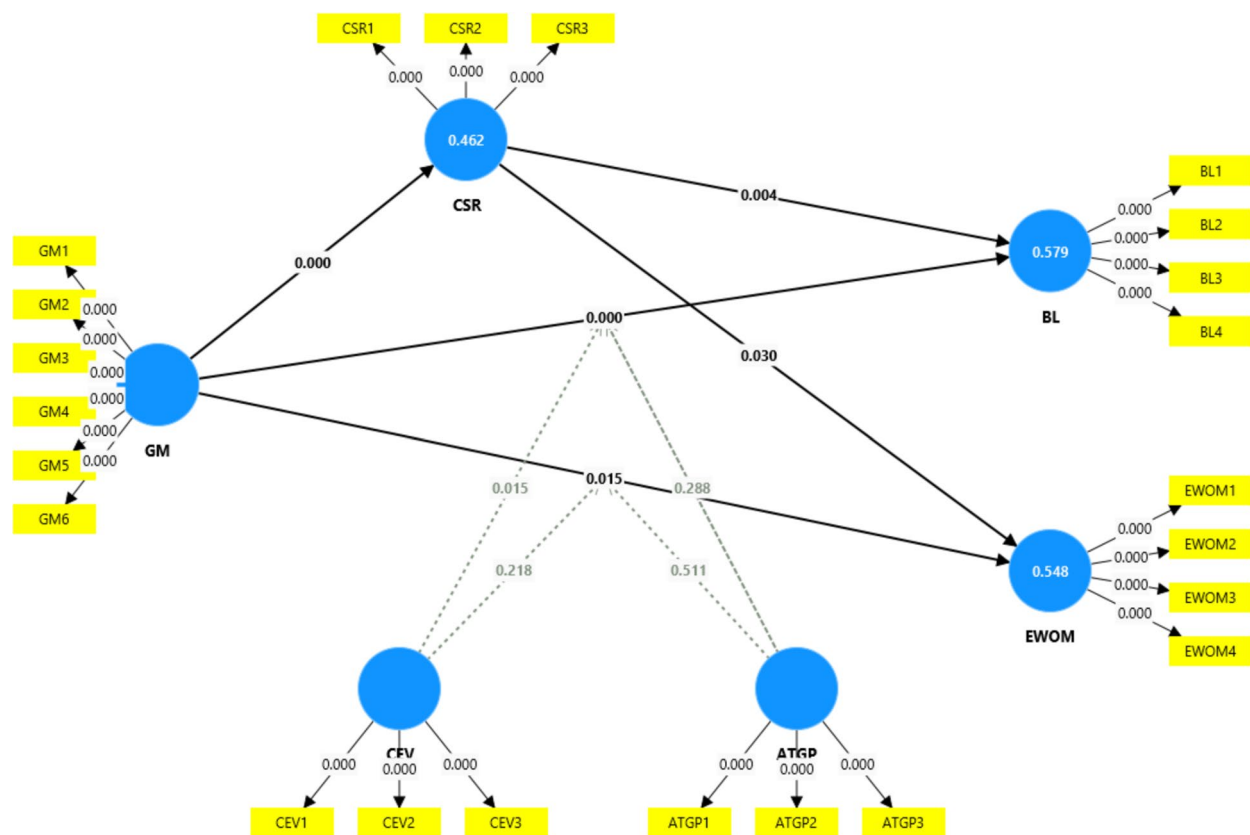


Fig. 3 Measurement model diagram (after applying the bootstrapping technique)

Table 7 Results of the structural model

Path	Beta	T stat	P val	Results
H1. Green marketing initiatives—> Brand loyalty	0.325	4.228	0.000	Supported
H2. Green marketing initiatives—> eWOM	0.197	2.429	0.015	Supported
H3. Green marketing initiatives—> CSR—> Brand loyalty	0.126	2.873	0.004	Supported
H4. Green marketing initiatives—> CSR—> eWOM	0.107	2.139	0.033	Supported
H5a. Consumer environmental values x Green marketing initiatives—> Brand loyalty	− 0.135	2.445	0.015	Supported
H5b. Consumer environmental values x Green marketing initiatives—> eWOM	− 0.055	1.232	0.218	Unsupported
H6a. Attitude toward green products x Green marketing initiatives—> Brand loyalty	− 0.047	1.064	0.288	Unsupported
H6b. Attitude toward green products x Green marketing initiatives—> eWOM	− 0.029	0.657	0.511	Unsupported

results offer insightful information about how eWOM, CSR, brand loyalty, and green marketing initiatives interact. Additionally, it draws attention to the complex roles that consumer attitudes toward green products and environmental values play.

It is noteworthy that attitudes toward green products did not significantly moderate the impact of green marketing on either brand loyalty or eWOM in our results. One potential explanation is an attitude behavior gap in the context of sustainability. Prior studies have observed

that even consumers with positive environmental attitudes do not always translate those attitudes into action or advocacy [37, 38]. In our study of North African consumers many of whom likely already favor eco-friendly products a uniformly high pro-environment attitude may have prevailed, leaving little variability to further enhance (or dampen) the effect of green marketing initiatives. In other words, most respondents may already be inclined to respond positively to green marketing, so attitude did not create a noticeable difference between

individuals. This finding aligns with recent work by Khan et al. [24], who highlighted that strong environmental attitudes alone are not sufficient to guarantee engagement in eWOM and other supportive behaviors. It suggests that additional factors such as social norms or trust in the brand's claims might be necessary to convert green attitudes into active loyalty or word-of-mouth. We discuss this implication further in the theoretical implications section, as it offers an interesting nuance to the TPB framework: Even though attitude is a key driver of intention, its moderating role can be limited if the audience is homogeneously inclined or if other barriers prevent behavior.

Discussion and implications

This research underscores the significant effect of green marketing strategies on brand loyalty and EWOM, stressing the necessity of genuine and credible green marketing to engage environmentally aware consumers in the North African context. The results correspond with recent studies highlighting the significance of green branding in enhancing consumer trust and advocacy, particularly in sectors where environmental issues are paramount. Mim et al. [18] noted that the effectiveness of green marketing is amplified when accompanied by credible endorsements, such as certifications from trusted environmental agencies or support from well-regarded influencers. Since consumers react more favorably when they believe that a brand is truly committed to environmental sustainability, these factors taken together underscore the crucial role of authenticity in green marketing.

This study makes a substantial contribution by demonstrating the mediating role of CSR and connecting green marketing campaigns to eWOM and brand loyalty. By integrating CSR, brands can demonstrate a heightened dedication to social and environmental accountability, thereby augmenting the perceived authenticity of their green marketing initiatives. Araújo et al. [20] noted that CSR boosts brand image and loyalty by resonating with consumers' expectations for corporate accountability. An interesting finding is that CSR's mediating effect was relatively stronger for eWOM than for brand loyalty. Our analysis showed that a sizable portion of green marketing's impact on eWOM was channeled through perceptions of CSR with a higher variance explained via CSR, compared to the brand loyalty path. CSR initiatives provide socially shareable content and moral endorsement that naturally fuel WOM [39]. Consumers are often more inclined to talk about a brand's good deeds such as charitable activities, eco-friendly projects, or community contributions, however, these CSR aspects are seen as noteworthy and align with social norms of praising responsible behavior.

However, it is also notable that consumers with strong environmental value may approach green marketing claims with a degree of skepticism, as suggested by Majeed et al. (2022), who reported that eco-conscious consumers tend to scrutinize green claims closely, heightening their sensitivity to potential greenwashing. For these consumers, CSR initiatives need to be transparent and demonstrably impactful, as they are more likely to scrutinize the authenticity of a brand's environmental commitments. This brings attention to a multifaceted problem with green marketing: To gain the confidence of environmentally concerned customers, brands need to engage in sustainable practices and authentically represent themselves.

Consumers with superior environmental values are less susceptible to being swayed by green marketing, according to the study's examination of the moderating impact of environmental values. This suggests that environmentally aware consumers may already possess elevated standards and are more discerning, potentially perceiving certain green marketing claims as insufficient or exaggerated. This critical stance is supported by Yang and Chai [22], who observed that increased environmental awareness moderates the effects of green marketing on eWOM, as these consumers are particularly attentive to the sincerity of a brand's sustainability efforts. For brands, this implies that standard green marketing may not suffice with eco-conscious consumers; instead, companies must adopt and transparently communicate genuinely impactful sustainability practices. Merely promoting green credentials without substantive backing may fail to engage this audience or could even backfire by fostering skepticism.

In particular, opinions about green products had little effect on the correlation between green marketing and either brand loyalty or eWOM. This result could point to a larger trend in which green characteristics are expected more and especially in developed markets, thus lessening the influence of consumer attitudes as a separate element promoting loyalty or advocacy. Yang and Chai [22] propose that in markets where green attributes are anticipated as standards, supplementary green marketing initiatives may experience diminishing returns unless they communicate a unique innovation or significant environmental advantage. For brands functioning in these contexts, this discovery highlights the necessity of implementing authentically unique sustainability initiatives instead of depending exclusively on traditional green messaging.

These results underscore the significance of authenticity, transparency, and innovation in sustainable marketing. While CSR can improve the connection between green marketing and positive consumer outcomes,

particularly in fostering brand loyalty and eWOM, the presence of heightened environmental values among consumers poses a significant challenge: These consumers require more than superficial green claims. They demand tangible proof of a brand's environmental commitments and appreciate brands that surpass standard eco-friendly practices. This study enhances the literature by asserting that in markets with elevated environmental consciousness, green marketing strategies must transcend superficiality and closely align with credible, impactful CSR initiatives.

This study's implementation of the TPB aligns closely with recent research that examines the impact of consumer attitudes, subjective norms, and perceived behavioral control on sustainable consumer behaviors. [15, 40] noted that perceived behavioral control within the TPB can amplify the influence of attitudes and social norms, this study finds that CSR initiatives strengthen the impact of green marketing by enhancing consumers' perceptions of brand credibility and commitment to sustainability. This alignment with CSR reinforces TPB's role in predicting consumer loyalty and advocacy, particularly when consumers view a brand as authentically dedicated to social responsibility. Canova and Manganelli [14] extended TPB's predictive capacity by integrating habits into energy-saving behavior studies, which parallels how this study identifies CSR as an additional reinforcing factor in shaping green consumer responses. The presence of credible CSR initiatives adds consistency to consumer perceptions, enhancing their likelihood of staying loyal and advocate for the brand in line with positive behavioral intentions. Moreover, Yang and Chai [22] support this study's finding that high environmental awareness among consumers can moderate the effectiveness of green marketing. They observed that increased environmental knowledge increases consumer expectations for transparency, which aligns with this study's insight that consumers with strong environmental values may scrutinize green claims more critically.

Managerial implications

This research offers significant insights for marketers aiming to use green marketing initiatives to increase brand loyalty and eWOM in North African markets. The results emphasize the importance of including authentic CSR programs with green marketing strategies. Companies should avoid greenwashing and instead focus on implementing tangible, impactful CSR initiatives that resonate with their target audience.

The study underscores the dual promise and paradox of green marketing in the North African market for managers. Green marketing, when integrated with authentic CSR initiatives, has the potential to

substantially improve brand loyalty and eWOM; however, the risk of consumer skepticism remains a concern. Managers must ensure that CSR programs are authentic and transparently aligned with broader corporate values to avoid perceptions of greenwashing. This necessitates the formulation of comprehensive strategies that align green marketing initiatives with enduring CSR commitments, as opposed to transient promotional tactics. Additionally, firms should tailor their green marketing messages to resonate with specific consumer environmental values while being cautious of overemphasizing them, as high consumer expectations can amplify criticism if initiatives are perceived as insincere.

Marketers must customize their strategies to align the specific needs and expectations of environmentally conscious consumers. For example, emphasizing transparency, using credible certifications, and emphasizing product environmental benefits can all help build trust and loyalty in this segment. Building long-term relationships with environmentally conscious customers requires more than just green marketing claims. Companies should maintain an ongoing dialog, address concerns, and show a genuine commitment to sustainability. This can be achieved by providing detailed information regarding product sourcing, manufacturing processes, and environmental impact; by collaborating with environmental organizations and supporting local initiatives; and by providing resources and information to help consumers make informed decisions.

The study highlights the significance of eWOM in influencing consumer perceptions. Marketers should use digital platforms to connect with customers, form online communities, and promote positive word-of-mouth. This can be accomplished by sharing compelling content about CSR initiatives and green products, collaborating with relevant influencers to promote sustainable practices, and actively responding to customer feedback and concerns. Businesses that implement these strategies can effectively use green marketing to build strong brands, foster customer loyalty, and drive favorable word-of-mouth in the North African market.

From a regional perspective, marketers in North Africa should tailor green marketing and CSR initiatives to local values and realities. Consumers in this region may be community-oriented and value authenticity highly, so companies will benefit from demonstrating tangible environmental actions that resonate with local culture. Moreover, green campaigns should incorporate storytelling that connects with North African consumers' daily lives and challenges, thereby making sustainability messages more relatable and credible. By aligning green marketing strategies with

regional norms and engaging respected local influencers or institutions to endorse their CSR efforts, firms can build trust and encourage stronger eWOM. This localized approach can help ensure that the promise of green marketing is fulfilled among North African consumers, rather than falling victim to the paradox of distrust.

Theoretical implications

This study theoretically enhances comprehension of the promise–paradox dynamic in the context of green marketing and corporate social responsibility (CSR). This research expands the theory of planned behavior (TPB) by illustrating the mediating function of CSR and the moderating influences of customer environmental values and attitudes toward eco-friendly products. The combination of promise and paradox emphasizes the intricacy of customer perceptions, indicating that although green marketing has the potential to promote sustainable consumer behavior, it also risks backlash if expectations are not genuinely fulfilled. This study enhances the TPB paradigm by incorporating the contradictory aspects of green marketing and CSR, providing a refined perspective for future research to investigate cultural and contextual differences in consumer reactions to green activities.

With a focus on the North African consumer market, this study advances our understanding of green marketing in diverse cultural and economic settings. The TPB is applied in this research to conceptualize consumer behavior in North African green marketing. The constructs of attitudes, subjective norms, and perceived behavioral control of the TPB are utilized to frame our comprehension of how these elements affect consumer responses to green marketing efforts, even though the TPB was not empirically tested within this study.

According to the TPB, underlying beliefs about the results of certain behaviors (e.g., buying green products) drive consumer attitudes toward those behaviors. This framework contributes to the understanding of consumer preferences for environmentally friendly brands, as discussed by Lee et al. (2010), who discovered that a hotel's environmentally friendly image has a major influence on the perceptions and behavior of its guests. Understanding consumer behavior in culturally diverse and community-oriented markets such as North Africa requires an understanding of the impact of subjective norms or the perceived social pressure to participate in or abstain from a behavior. Using the TPB, Willis et al. [13] demonstrated how social norms impact behavior. This can be applied to green marketing to comprehend how societal expectations may impact consumer choices toward green products.

This construction describes the perceived simplicity or complexity of a behavior, and it is believed to have a direct effect on behavior when there is a significant motivation to act in a specific manner. According to Canova and Manganelli [14], adding perceived behavioral control to the TPB strengthens its ability to predict behaviors such as energy savings, which can be compared with purchasing decisions in green marketing.

The study's theoretical implications highlight the value of the TPB in analyzing the psychological processes underlying consumer behavior in North Africa's response to green marketing. The discussion is enhanced by the citations to foundational works on the application of the TPB in diverse contexts, which highlight the ways in which this theory can be modified to more accurately forecast and comprehend how consumers react to environmental marketing initiatives. In addition to providing context for current theoretical understanding, this foundational viewpoint paves the way for future empirical research that may directly apply and test the TPB in this emerging market context.

The results also emphasize the significance of CSR as a mediating element, strengthening the theoretical framework of how consumer behavior is influenced by green marketing campaigns. The study also emphasizes how theoretical models of green marketing efficacy must consider customer environmental values and attitudes. By concentrating on the consumer market in North Africa, this study advances the knowledge of green marketing in a variety of cultural and economic settings. The knowledge acquired may guide more successful and culturally sensitive marketing plans, which will eventually help companies in emerging countries increase customer advocacy and loyalty.

Conclusion

This study contributes to the growing body of research on green marketing and CSR in emerging markets by offering empirical insights specific to North African consumers. While the findings indicate that green marketing and CSR positively influence brand loyalty and eWOM. The theoretical contributions are modest extensions of the TPB framework, and our conclusions are bounded by the study's methodological and contextual constraints. However, a paradox emerges within the context of CSR, while it holds the promise of fostering genuine consumer trust and loyalty through green marketing efforts, it also creates a tension where insincere or superficial CSR practices could lead to skepticism or consumer backlash. This duality underscores the critical need for businesses to align their CSR initiatives authentically with their broader marketing and operational strategies. This research not only enriches the academic literature by

providing insights specific to North African markets but also offers practical implications for marketers. The insights gathered from this research can be used to customize culturally and contextually relevant green marketing strategies, which may increase brand loyalty and improve the effectiveness of eWOM.

Theoretically, our work extends foundational frameworks like the TPB by demonstrating how integrating an authentic CSR component transforms consumer attitudes into concrete loyalty and advocacy behaviors. In particular, CSR serves as the crucial linchpin that aligns individual consumer values with social norms and perceived firm credibility, thereby converting green intentions into sustainable actions. From a managerial standpoint, our study offers a narrative that blends global principles with local relevance. The North African context illustrates that consumers are receptive to sustainability efforts, but only if these efforts are perceived as authentic. Companies operating in similar emerging markets should heed the dual lesson of promise and paradox: The promise lies in leveraging green marketing as a driver of competitive advantage and customer advocacy, whereas the paradox warns of skepticism if those green claims ring hollow. Managers should therefore design green marketing campaigns that are backed by concrete CSR actions. By doing so, businesses not only enhance brand loyalty and eWOM in the short term but also build a durable reputation for integrity and social responsibility in the long term. This research enriches the academic literature with region-specific evidence and provides a cohesive theoretical and managerial narrative: Sustainable marketing strategies can indeed foster loyal, vocal customer communities in emerging markets, provided that authenticity remains at the core of the brand's ethos.

This research has the following limitations; the study focuses solely on North African markets; the results may not be applicable to other regions with distinct cultural, economic, and environmental dynamics. Additionally, this study relies on self-reported measures, which may introduce social desirability bias, particularly in domains like environmental behavior. The young and country-skewed sample with over 50% of respondents also limits the generalizability of the findings to broader demographic and cultural contexts. Moreover, the cross-sectional design prevents inference of causal relationships. Future studies could employ experimental or longitudinal designs to better capture the dynamics of CSR perception, green loyalty, and eWOM over time.

Further studies could benefit from enlarging the sample size to include over 500 participants and ensuring greater diversity among them to increase the representativeness of the findings across all North African countries. To further broaden our knowledge of the effects of

green marketing, future studies should try to overcome the limitations noted in this paper. It is suggested that the TPB be empirically evaluated within the context of green marketing to directly quantify the impacts of attitudes, subjective norms, and perceived behavioral control on consumer behaviors in various cultural contexts. Longitudinal research may reveal how changing consumer perceptions of green marketing evolve over time and impact brand loyalty and eWOM. Understanding the effects of cultural factors on the efficacy of green marketing would be facilitated by comparative research conducted in several locations. The depth of insights could be increased by combining quantitative and qualitative data through a mixed-methods approach, especially by means of qualitative insights into the motivations and perceptions of consumers about green marketing.

Author contributions

CRedit authorship contribution statement: M.I. and A.M. Writing – review & editing, M.I. and A.M. Writing – original draft, A.M. Visualization, M.I. and A.M. Validation, M.I. Supervision, A.M. Software, M.I. Resources, A.M. Methodology, M.I. and A.M. Investigation, A.M. Formal analysis, M.I. and A.M. Conceptualization, A.M. Data curation.

Funding

There is no research funding for this research.

Data availability

The datasets used and/or analyzed during the current study are available from the corresponding author on reasonable request.

Declarations

Ethics approval and consent to participate

Not applicable.

Consent for publication

Not applicable.

Competing interests

The authors declare no competing interests.

Received: 22 November 2024 Accepted: 28 January 2026

Published online: 16 February 2026

References

1. Close C (2021) Eco-wakening: consumers are driving sustainability. World economic forum. <https://www.weforum.org/agenda/2021/05/eco-wakening-consumers-driving-sustainability/>
2. Reichheld A, Peto J, Ritthaler C (2023) Research: consumers' sustainability demands are rising. Harv Bus Rev. <https://hbr.org/2023/09/research-consumers-sustainability-demands-are-rising>
3. Shopify Staff (2022, October 28) What is green marketing? Definition and examples. Shopify. <https://www.shopify.com/blog/what-is-green-marketing>
4. Fernando J (2024) What is green marketing? Definition, example and how it works. Investopedia. <https://www.investopedia.com/terms/g/green-marketing.asp>

5. Yadav R, Dokania AK, Pathak GS (2016) The influence of green marketing functions in building corporate image. *Int J Contemp Hosp Manag* 28(10):2178–2196. <https://doi.org/10.1108/ijchm-05-2015-0233>
6. Kato T (2021) Brand loyalty explained by concept recall: recognizing the significance of the brand concept compared to features. *J Mark Anal* 9(3):185–198. <https://doi.org/10.1057/s41270-021-00115-w>
7. Lin J, Lobo A, Leckie C (2017) Green brand benefits and their influence on brand loyalty. *Mark Intell Plann* 35(3):425–440. <https://doi.org/10.1108/mip-09-2016-0174>
8. Chen Y, Huang A, Wang T, Chen Y (2018) Greenwash and green purchase behavior: the mediation of green brand image and green brand loyalty. *Total Qual Manag Bus Excell* 31(1–2):194–209. <https://doi.org/10.1080/14783363.2018.1426450>
9. Ajzen I (1991) The theory of planned behavior. *Organ Behav Hum Decis Process* 50(2):179–211. [https://doi.org/10.1016/0749-5978\(91\)90020-t](https://doi.org/10.1016/0749-5978(91)90020-t)
10. Uddin SF, Khan MN (2018) Young consumer's green purchasing behavior: opportunities for green marketing. *J Glob Mark* 31(4):270–281. <https://doi.org/10.1080/08911762.2017.1407982>
11. Rosario AB, De Valck K, Sotgiu F (2019) Conceptualizing the electronic word-of-mouth process: what we know and need to know about eWOM creation, exposure, and evaluation. *J Acad Mark Sci* 48(3):422–448. <https://doi.org/10.1007/s11747-019-00706-1>
12. Ajzen I (2012) The theory of planned behavior. In: SAGE publications Ltd. eBooks (pp. 438–459). <https://doi.org/10.4135/9781446249215.n22>
13. Willis L, Lee E, Reynolds KJ, Klik KA (2020) The theory of planned behavior and the social identity approach: a new look at group processes and social norms in the context of student binge drinking. *Eur J Psychol* 16(3):357–383. <https://doi.org/10.5964/ejop.v16i3.1890>
14. Canova L, Manganello AM (2020) Energy-saving behaviors in workplaces: application of an extended model of the theory of planned behavior. *Europe's J Psychol* 16(3):384–400. <https://doi.org/10.5964/ejop.v16i3.1893>
15. La Barbera F, Ajzen I (2020) Control interactions in the theory of planned behavior: rethinking the role of subjective norm. *Eur J Psychol* 16(3):401–417. <https://doi.org/10.5964/ejop.v16i3.2056>
16. Caputo A (2020) Comparing theoretical models for the understanding of health-risk behavior: toward an integrative model of adolescent alcohol consumption. *Europe's J Psychol* 16(3):418–436. <https://doi.org/10.5964/ejop.v16i3.2213>
17. Javed N, Khalil SH, Ishaque A, Sultan F (2024) From green lovemarks to brand loyalty: examining the underlining role of customer engagement behavior and altruism. *J Knowl Econ*. <https://doi.org/10.1007/s13132-024-01848-6>
18. Mim KB, Jai T, Lee SH (2022) The influence of sustainable positioning on eWOM and brand loyalty: analysis of credible sources and transparency practices based on the S-O-R model. *Sustainability* 14(19):12461. <https://doi.org/10.3390/su141912461>
19. Ahmad N, Ahmad A, Lewandowska A, Han H (2023) From screen to service: how corporate social responsibility messages on social media shape hotel consumer advocacy. *J Hosp Market Manag*. <https://doi.org/10.1080/19368623.2023.2271448>
20. Araújo J, Pereira IV, Santos JD (2023) The effect of corporate social responsibility on brand image and brand equity and its impact on consumer satisfaction. *Adm Sci* 13(5):118. <https://doi.org/10.3390/admsci13050118>
21. Fishbein M, Ajzen I (1975) Belief, attitude, intention, and behavior: an introduction to theory and research. Addison-Wesley
22. Yang S, Chai J (2022) The influence of enterprises' green marketing behavior on consumers' green consumption intention: mediating role and moderating role. *Sustainability* 14(22):15478. <https://doi.org/10.3390/su142215478>
23. Khandai S, Zupic I, Kohli HS, Kataria S, Yadav R, Mathew J (2025) Greenwashing and its consequences: the role of skepticism, brand embarrassment, and brand hate in shaping purchase intentions. *Qual Quant*. <https://doi.org/10.1007/s11135-025-02132-8>
24. Khan FM, Uddin SF, Anas M, Kautish P, Thaichon P (2025) Personal values and sustainable consumerism: performance trends, intellectual structure, and future research fronts. *J Consum Behav* 24(2):734–770. <https://doi.org/10.1002/cb.2436>
25. Howard MC, Boudreaux M, Oglesby M (2024) Can Harman's single-factor test reliably distinguish between research designs? Not in published management studies. *Eur J Work Organ Psychol* 33(6):790–804. <https://doi.org/10.1080/1359432X.2024.2393462>
26. Xu Y (2014) Understanding CSR from the perspective of Chinese diners: the case of McDonald's. *Int J Contemp Hosp Manag* 26(6):1002–1020. <https://doi.org/10.1108/ijchm-01-2013-0051>
27. Alcañiz EB, Cáceres RC, Pérez RC (2010) Alliances between brands and social causes: the influence of company credibility on social responsibility image. *J Bus Eth* 96(2):169–186. <https://doi.org/10.1007/s10551-010-0461-x>
28. Ko E, Hwang YK, Kim EY (2013) Green marketing' functions in building corporate image in the retail setting. *J Bus Res* 66(10):1709–1715. <https://doi.org/10.1016/j.jbusres.2012.11.007>
29. Karaosmanoglu E, Melewar TC (2006) Corporate communications, identity and image: a research agenda. *J Brand Manag* 14(1–2):196–206. <https://doi.org/10.1057/palgrave.bm.2550060>
30. Maloney MP, Ward MP (1973) Ecology: let's hear from the people: an objective scale for the measurement of ecological attitudes and knowledge. *Am Psychol* 28(7):583–586. <https://doi.org/10.1037/h0034936>
31. Conner M, Warren R, Close S, Sparks P (1999) Alcohol consumption and the theory of planned behavior: an examination of the cognitive mediation of past behavior. *J Appl Soc Psychol* 29(8):1676–1704. <https://doi.org/10.1111/j.1559-1816.1999.tb02046.x>
32. Kim HY, Chung J (2011) Consumer purchase intention for organic personal care products. *J Consum Mark* 28(1):40–47. <https://doi.org/10.1108/07363761111101930>
33. Hair JF, Black WC, Babin BJ, Anderson RE, Black WC, Anderson RE (2019) Multivariate data analysis (Eighth). Cengage learning EMEA.
34. D'Acunto D, Filieri R (2021) The attitude-behaviour gap in eWOM: the paradoxical Generation Z. In: XVIII SIM conference proceedings. "Trasformazione digitale deimercati: il marketing nellacreazione di valore per leimprese e la società" (pp. 1–11)
35. Dirgiamto Y (2023) Testing the discriminant validity and heterotrait-monotrait ratio of correlation (HTMT): a case in Indonesian SMEs. In: Macroeconomic risk and growth in the southeast asian countries: insight from Indonesia (pp. 157–170). Emerald Publishing Limited. <https://doi.org/10.1108/S1571-03862023000033A011>
36. Byrne BM (2013) Structural equation modeling with AMOS. In: Psychology press ebooks. <https://doi.org/10.4324/9781410600219>
37. D'Acunto D, Filieri R, Okumus F (2025) The Gen Z attitude-behavior gap in sustainability-framed ewom: a generational cohort theory perspective. *Int J Hosp Manag* 129:104194. <https://doi.org/10.1016/j.ijhm.2025.104194>
38. Saqib ZA, Ikram M, Qin L (2025) Mediating role of eWOM's in green behavior interaction and corporate social responsibility: a stakeholder theory perspective. *Int J Eth Syst*. <https://doi.org/10.1108/IJOES-10-2024-0336>
39. Hartmann P, Fernández P, Apaolaza V, Eisend M, D'Souza C (2021) Explaining viral CSR message propagation in social media: the role of normative influences. *J Bus Ethics* 173(2):365–385. <https://doi.org/10.1007/s10551-020-04540-2>
40. La Barbera F, Ajzen I (2020) Understanding support for European integration across generations: a study guided by the theory of planned behavior. *Eur J Psychol* 16(3):437–457. <https://doi.org/10.5964/ejop.v16i3.1844>
41. Amoako GK, Doe JK, Dzogbenuku RK (2021) Perceived firm ethicality and brand loyalty: the mediating role of corporate social responsibility and perceived green marketing. *Soc Bus Rev* 16(3):398–419. <https://doi.org/10.1108/SBR-05-2020-0076>

Publisher's Note

Springer Nature remains neutral with regard to jurisdictional claims in published maps and institutional affiliations.