



Greenwashing in the digital era: impact of social media exposure on consumer trust and brand equity

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Abstract

This study investigates the impact of perceived greenwashing on consumer trust and brand equity in social media environments. Drawing on signalling theory and attribution theory, the research examines how misleading environmental claims influence consumer perceptions and brand-related outcomes. The present study employed a mixed-method research design that integrated quantitative modeling through Structural Equation Modeling (SEM) with qualitative interpretation based on sentiment assessment of social media content. The empirical dataset consisted of survey responses obtained from 312 participants, complemented by 2,400 user-generated posts and comments retrieved from Instagram and X (Twitter) for comprehensive analysis. The results indicate that perceived greenwashing has a significant negative effect on consumer trust, which in turn positively influences brand equity, confirming a mediating relationship. Additionally, digital sustainability literacy moderates the relationship between greenwashing and consumer trust, reducing its negative impact among more informed consumers. Sentiment analysis reveals a predominance of negative consumer attitudes toward greenwashing practices. The study contributes to the literature by integrating mediation, moderation, and sentiment analysis within a unified framework and provides managerial implications for transparent sustainability communication in digital environments.

Keywords: Greenwashing, Consumer trust, Brand equity, Digital sustainability literacy, Social media

Introduction

In recent years, sustainability has emerged as a central element of corporate strategy and marketing communication, driven by increasing environmental concerns, regulatory pressures, and heightened consumer awareness (Santos *et al.*, 2024) [26]. Organizations across industries actively promote environmental initiatives to demonstrate social responsibility and ecological commitment (Ktisti *et al.*, 2022) [19]. However, this growing emphasis on sustainability has also been accompanied by the rise of greenwashing defined as misleading or exaggerated environmental claims which distorts consumer perceptions and undermines the credibility of genuine sustainability efforts (Areethai *et al.*, 2025) [4] (Ha, 2022) [12].

The rapid advancement of digital technologies has further intensified this issue. Social media platforms such as Instagram and X (formerly Twitter) facilitate real-time interaction, user engagement, and the rapid dissemination of information (AlQahtani, 2025; Knight *et al.*, 2022) [1, 18].

While these platforms enhance transparency and accessibility, they also accelerate the spread of misleading sustainability claims, leading to increased consumer confusion and skepticism (Ktisti *et al.*, 2022) [19]. Unlike traditional media, social media enables active consumer participation, allowing users to evaluate, share, and challenge corporate narratives, thereby amplifying both positive and negative perceptions of brands (Risitano *et al.*, 2025) [25].

In this context, exposure to greenwashing on social media has significant implications for consumer behavior, particularly in shaping consumer trust and brand equity. Consumer trust is a critical determinant of long-term customer relationships and loyalty, whereas brand equity reflects the perceived value and strength of a brand in the marketplace (Shiva & Manoharan, 2025) [27]. When consumers perceive environmental claims as deceptive, it leads to skepticism, erosion of trust, and a decline in brand equity. Conversely, transparent and authentic sustainability communication enhances consumer trust and strengthens brand positioning (Ha, 2022) [12].

Despite increasing scholarly attention to greenwashing, several gaps remain in the existing literature. First, prior studies have predominantly examined greenwashing within traditional marketing contexts, with limited focus on highly interactive social media environments (Karunasingha & Abeysekera, 2022) [16]. Second, there is a lack of integrated frameworks that simultaneously examine the relationships among perceived greenwashing, consumer trust, and brand equity (Santos *et al.*, 2024) [26]. Third, the moderating role of digital sustainability literacy defined as consumers' ability to critically evaluate sustainability-related information in digital contexts remains underexplored (Balaskas *et al.*, 2025; Özel, 2025) [6, 24].

In addition to its theoretical relevance, the present study holds significant practical importance in the contemporary digital marketplace. As consumers increasingly rely on social media

platforms for information, firms are under growing pressure to communicate their sustainability initiatives transparently and credibly. Misleading environmental claims not only damage consumer trust but also expose organizations to reputational risks and negative public scrutiny. Therefore, understanding how greenwashing influences consumer perceptions is essential for developing effective and responsible marketing strategies. The insights from this study can assist marketers, brand managers, and policymakers in designing authentic sustainability communication, enhancing consumer awareness, and promoting ethical business practices in digital environments.

In response to these research gaps, the present study examines the impact of perceived greenwashing on consumer trust and brand equity within social media environments. Specifically, it investigates (i) the effect of perceived greenwashing on consumer trust, (ii) the influence of consumer trust on brand equity, (iii) the mediating role of consumer trust in the relationship between perceived greenwashing and brand equity, (iv) the moderating effect of digital sustainability literacy on the relationship between perceived greenwashing and consumer trust, and (v) consumer sentiment toward greenwashing practices on social media. By employing a mixed-methods approach that integrates survey-based structural equation modeling (SEM) with social media sentiment analysis, this study provides a comprehensive understanding of consumer responses to greenwashing in the digital era. The findings offer practical insights for marketers and policymakers to develop transparent, credible, and effective sustainability communication strategies.

Literature review

Previous studies indicate that greenwashing leads to negative consumer perceptions and damages brand credibility, ultimately affecting key marketing outcomes. Among these outcomes, consumer trust has been identified as a critical mechanism linking marketing communication with brand-related consequences.

Perceived greenwashing has been consistently associated with a decline in consumer trust. Greenwashing erodes trust by fostering perceptions of dishonesty in sustainability communication (Hossain *et al.*, 2025) [13]. When firms exaggerate or distort their environmental practices, consumers develop skepticism toward brand claims, which weakens long-term relational commitment. Similarly, greenwashing creates consumer confusion and perceived risk, both of which negatively influence trust formation. Consumers who are unable to accurately evaluate environmental claims experience uncertainty, leading to reduced confidence in brand credibility (Chen & Chang, 2013) [8].

Misleading sustainability narratives distort consumer perceptions and diminish the perceived authenticity of brand communication. Continuous exposure to these practices fosters distrust and prompts consumers to scrutinize the integrity of corporate environmental commitments (AlQahtani, 2025) [1]. Empirical studies indicate that perceived greenwashing significantly undermines consumer trust and brand equity.

Higher levels of perceived deception result in increased skepticism among consumers. Greenwashing adversely affects both consumers' perceptions of environmental issues and their views on specific products, which in turn strengthens negative evaluations of the brand (Szabo & Webster, 2021) [30].

Furthermore, this relationship can be explained through the lens of information asymmetry, where consumers rely on corporate environmental claims as signals of organizational responsibility. When such signals are perceived as misleading, it creates cognitive dissonance and reduces the credibility of the information source. As a result, consumers develop skepticism toward sustainability communication, which weakens trust and negatively influences their evaluation of brands (Dixit & Singh, 2024) [11].

Based on these findings, it is evident that perceived greenwashing consistently reduces consumer trust across different contexts. Drawing upon the available empirical evidence, the following hypothesis is posited:

H1: Perceived greenwashing has a significant negative effect on consumer trust.

Consumer trust is widely recognized as a fundamental determinant of brand equity. Trust strengthens the credibility of brand claims, thereby enhancing perceived brand value and leading to more favorable brand evaluations (Sutanto & Kussudyarsana, 2024) [29]. It also drives positive attitudes and repurchase intentions, which further reinforce overall brand equity (Alsaggaf, 2025) [2]. Trust plays a crucial role in enhancing brand value by shaping how consumers perceive environmental claims, particularly through customer satisfaction and brand image, ultimately influencing their purchasing decisions and brand loyalty (Isac *et al.*, 2024) [15]. Trust in green brands significantly influences the way customers perceive and evaluate a brand, particularly when environmental assertions are made. When consumers trust a brand, they are more likely to view its actions as genuine, which helps build a positive environmental reputation and supports long-term relationships with customers (Tran, 2023) [31]. Trust also influences how consumers judge a brand's image and reliability, making it a key factor in overall brand evaluation (Monfort *et al.*, 2025) [21]. These findings collectively indicate a strong connection between trust and consumers' perception and valuation of a brand.

From a relational perspective, trust is fundamental to lasting consumer-brand relationships. When a brand is perceived as trustworthy, consumers associate it with qualities such as consistency, credibility, and dependability, which enhance their overall evaluation of the brand. The role of trust becomes even more crucial in digital environments, as consumers face an overwhelming amount of information and frequently depend on trust to navigate competing claims. In these situations, trust reduces uncertainty and encourages more assured decision-making, ultimately strengthening brand equity.

Accordingly, the following hypothesis is proposed:

H2: Consumer trust has a significant positive effect on brand equity.

While greenwashing can have a direct effect on consumer perceptions, its influence on brand equity is not immediate. Instead, consumers interpret these practices based on their trust in the brand. When they perceive environmental claims as misleading or exaggerated, they start to question the brand's credibility and sincerity, resulting in a decline in trust. This decrease in trust subsequently affects how the brand is evaluated, particularly regarding its perceived value and overall brand equity.

Previous studies support this indirect mechanism by emphasizing that trust acts as a key process through which marketing-related stimuli affect consumer behavior (Karunasingha & Abeysekera, 2022) [16]. In sustainability contexts, trust transforms environmental perceptions into evaluative and behavioral outcomes, signifying that consumers react to environmental assertions based on their trust in the brand (Nguyen-Viet *et al.*, 2024) [22]. Similarly, trust links consumers' cognitive evaluations with their behavioral responses, reinforcing its role as a key mechanism in shaping brand-related perceptions (Borah *et al.*, 2024) [7].

Misleading practices like greenwashing significantly undermine consumer trust. This erosion of trust negatively impacts brand evaluations and diminishes brand equity (Isac *et al.*, 2024) [15]. Consequently, the effect of greenwashing on brand equity is mediated by consumer trust.

Thus, consumer trust serves as a crucial mediating variable by which perceived greenwashing affects brand equity.

Therefore, the following hypothesis is proposed:

H3: Consumer trust mediates the relationship between perceived greenwashing and brand equity.

The effect of perceived greenwashing on consumer trust differs across individuals, particularly depending on their level of digital sustainability literacy. Digital sustainability literacy refers to consumers' ability to access, understand, and critically evaluate sustainability-related information in digital environments. This skill is especially crucial in social media contexts, where consumers encounter a diverse array of environmental claims, each with varying degrees of credibility (Arpaci *et al.*, 2024a; Hu & Meng, 2023) [5, 14].

Existing studies suggest that individuals with higher levels of digital literacy are better equipped to interpret complex information and assess the credibility of sustainability communication (Álvarez-García & Sureda-Negre, 2023) [3]. Such consumers are more likely to question exaggerated or ambiguous claims and rely on critical evaluation rather than superficial cues. Digital literacy enhances consumers' ability to critically evaluate environmental information and reduces the influence of misleading claims (Hu & Meng, 2023; Özel, 2025; Yu & Yi, 2024) [14, 24, 32]. Consumers with higher levels of digital literacy can differentiate between authentic and misleading sustainability practices, which enables them to make more informed and rational evaluations (Ktisti *et al.*, 2022; Lu *et al.*, 2024) [19, 24].

Empirical studies indicate that digital literacy moderates consumer reactions in digital environments. Specifically, it diminishes the negative effects of misleading communication by allowing consumers to process information in a more critical and independent manner (Delgado-Ballester, 2004; Yu & Yi, 2024) [10, 32]. Individuals with both digital literacy and a heightened sense of social responsibility exhibit greater resistance to greenwashing and are more likely to engage in responsible consumption behavior (Areethai *et al.*, 2025; Szabo & Webster, 2021) [4, 30].

When consumers possess higher levels of digital sustainability literacy, they are less likely to experience a significant drop in trust when faced with greenwashing. This is due to their enhanced ability to evaluate the credibility of such claims. Consumers with lower levels of digital literacy struggle to critically evaluate environmental claims, which makes them more susceptible to misleading communication, such as exaggerated or false claims about a product's environmental benefits (Sutanto & Kussudyarsana, 2024) [29]. Consequently, greenwashing exerts a stronger adverse influence on their trust. These findings indicate that digital sustainability literacy is crucial in influencing the relationship between perceived greenwashing and consumer trust.

Digital platforms significantly influence collective consumer sentiment regarding greenwashing. The interactive nature of social media allows users to share their opinions, question brand claims, and assess corporate communication collaboratively (Borah *et al.*, 2024; Karunasingha & Abeysekera, 2022) [7, 16]. As consumers become more aware of misleading sustainability practices, their responses increasingly exhibit skepticism and critical judgment. Therefore, perceived greenwashing is likely to foster negative sentiment within social media environments.

H4: Digital sustainability literacy moderates the relationship between perceived greenwashing and consumer trust.

H5: Perceived greenwashing has a significant negative effect on social media sentiment.

This study draws on signaling theory and attribution theory to elucidate how consumers interpret sustainability-related information within digital environments.

Signaling theory suggests that companies convey hidden attributes through signals when there is a disparity in information (Connelly *et al.*, 2011; Spence, 1973) [9, 28]. In sustainability contexts, environmental claims serve as indicators of corporate responsibility. The effectiveness of these claims depends on how credible consumers perceive them to be. When consumers perceive greenwashing, sustainability signals lose credibility and are interpreted as deceptive, leading to signal dilution and reduced trust (Chen & Chang, 2013; Szabo & Webster, 2021) [8, 30]. In the digital era, social media platforms significantly alter signaling processes by allowing for the rapid spread of information, facilitating user-generated validation, and enabling public scrutiny. This transformation amplifies both credible and misleading signals.

Attribution theory provides further understanding of how consumers evaluate the intentions behind corporate behavior (Kelley, 1973) [17]. When consumers perceive greenwashing, they tend to make internal attributions, viewing firms' sustainability claims as opportunistic and self-serving. These attributions result in decreased trust and negative brand evaluations (Chen & Chang, 2013; Nyilasy *et al.*, 2014) [8, 23]. Social media exposure intensifies this process by enabling collective interpretation, where consumers exchange experiences, bolster skepticism, and collaboratively construct negative narratives about brands.

The theories discussed create a complementary framework: signaling theory addresses the credibility of sustainability communication, while attribution theory focuses on how consumers interpret the motives of firms. Additionally, social media exposure serves as a crucial contextual factor that amplifies both of these processes. This amplification ultimately strengthens the negative effects of perceived greenwashing on consumer trust and brand equity.

Conceptual framework

Informed by the extant literature and empirical evidence, the study advances a conceptual framework that captures the relationships among perceived greenwashing, consumer trust,

and brand equity within the social media landscape. Perceived greenwashing is considered the independent variable, while brand equity is treated as the dependent variable. Consumer trust is incorporated as a mediating variable, explaining the mechanism through which perceived greenwashing influences brand equity (Chen & Chang, 2013; Ha, 2022) [8, 12].

Furthermore, digital sustainability literacy is introduced as a moderating variable that influences the strength of the relationship between perceived greenwashing and consumer trust. Consumers with higher levels of digital sustainability literacy are better equipped to critically evaluate environmental claims, thereby reducing the negative impact of greenwashing (Arpaci *et al.*, 2024b; Hu & Meng, 2023) [5, 14].

In addition, social media sentiment is included as an outcome variable to capture consumer responses in digital environments. It is proposed that perceived greenwashing negatively influences social media sentiment, as users tend to express skepticism and criticism toward misleading sustainability practices (AlQahtani, 2025; Hossain *et al.*, 2025) [1, 13].

The proposed framework integrates direct, indirect (mediated), and moderated relationships to provide a comprehensive understanding of how greenwashing influences consumer behavior and brand equity in the digital era.

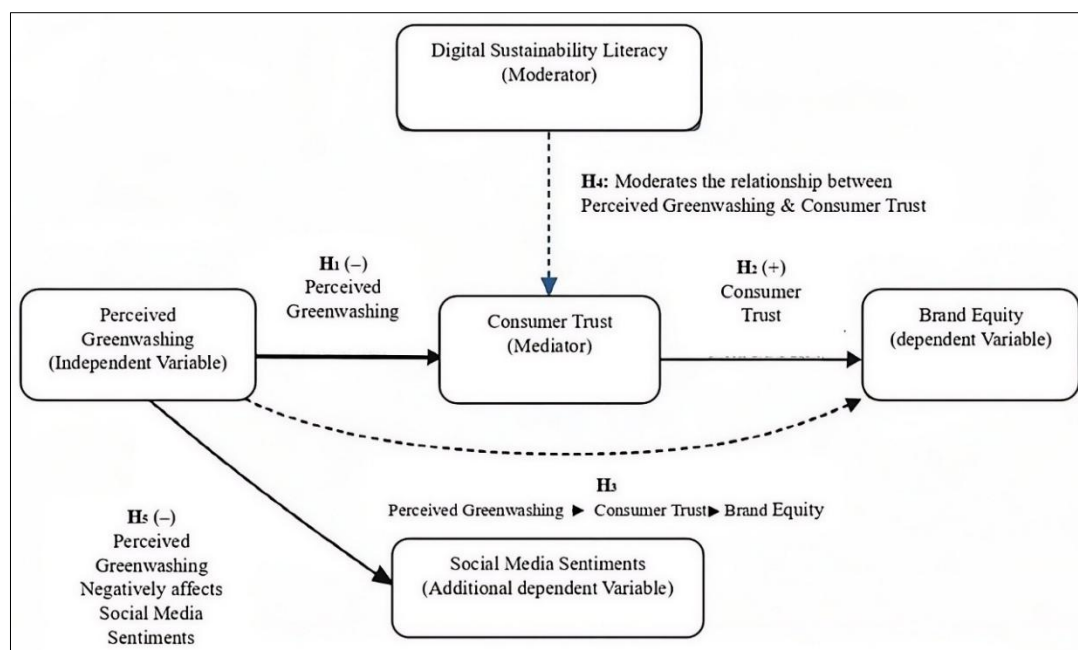


Fig 1: Conceptual framework of the study

Methods

The present study employs a mixed-methods research approach to examine the effects of perceived greenwashing on consumer trust and brand equity in digital environments. The quantitative component involves a structured survey to test the hypothesized relationships using statistical techniques, while the qualitative component incorporates social media sentiment analysis to capture real-time consumer perceptions and reactions. This integrated approach enhances the robustness and validity of the findings by combining behavioral data with user-generated content analysis.

The empirical investigation is based on data collected from 312 respondents. A purposive sampling technique was employed to select participants who are active users of social media platforms and are exposed to sustainability-related marketing content. The study focuses on urban consumers in India, as this segment demonstrates higher digital engagement and greater awareness of environmental issues, making it particularly relevant for examining greenwashing in a digital context.

Primary data was gathered through a structured questionnaire employing a five-point Likert scale ranging from "strongly disagree" to "strongly agree." The instrument assessed the

principal study constructs, namely perceived greenwashing, consumer trust, brand equity, and digital sustainability literacy. Complementing the survey findings, additional data were sourced from social media platforms, specifically Instagram and X (formerly Twitter). A total of 2,400 user-generated comments were retrieved and subjected to sentiment evaluation to examine public perceptions of greenwashing practices, thereby providing a more comprehensive perspective on consumer behaviour.

The study incorporates perceived greenwashing as the independent variable, consumer trust as the mediating variable, brand equity as the dependent variable, and digital sustainability literacy as the moderating variable. Social media sentiment is included as an additional outcome variable to capture consumer responses in digital environments.

The collected data were analyzed using a combination of statistical and qualitative techniques. Descriptive statistics were computed using SPSS to summarize respondent characteristics and key variables. Structural Equation Modeling (SEM) was conducted using AMOS/SmartPLS to test the hypothesized relationships, including mediation and moderation effects. For qualitative analysis, NVivo software was employed to perform thematic coding and sentiment analysis of social media comments, enabling the identification of patterns in consumer perceptions and attitudes toward greenwashing practices.

To formally represent the relationships among the study variables, the structural model is specified as follows:

$$CT = \beta_1(PG) + \beta_2 (PG \times DSL) + \epsilon_1$$

$$BE = \beta_3(CT) + \epsilon_2$$

$$\text{Sentiment} = \beta_4(PG) + \epsilon_3$$

where CT represents consumer trust, BE denotes brand equity, PG refers to perceived greenwashing, and DSL represents digital sustainability literacy. The interaction term (PG × DSL) captures the moderating effect of digital sustainability literacy on the relationship between perceived greenwashing and consumer trust. The β coefficients indicate the strength and direction of the relationships, while ε represents the error terms. These equations provide a formal representation of the proposed associations examined through Structural Equation Modeling (SEM).

Results

The demographic characteristics of the respondents are summarized in Table 1. The results indicate that 70.5% of respondents fall within the 21–30 age group, representing a predominantly young and digitally active population. In terms of gender, 53.8% are male and 46.2% are female. Regarding social media usage, 55.7% of respondents spend more than three hours per day on social media platforms, indicating a high level of digital engagement. These characteristics confirm the suitability of the sample for examining consumer behavior in digital environments.

Table 1: Demographic profile of respondents (N = 312)

Variable	Category	Frequency	Percentage (%)
Age	21–25	118	37.8
	26–30	102	32.7
	31–35	54	17.3
	Above 35	38	12.2
Gender	Male	168	53.8
	Female	144	46.2
Social media usage	< 1 hour	42	13.5
	1–3 hours	96	30.8
	> 3 hours	174	55.7

The adequacy of the measurement model was examined through reliability and validity assessments. As reported in Table 2, all study constructs demonstrated satisfactory internal consistency, with both Cronbach’s alpha and composite reliability (CR) coefficients surpassing the recommended benchmark of 0.70. Furthermore, the average variance

extracted (AVE) values for all constructs exceeded the threshold of 0.50, indicating adequate convergent validity. Collectively, these findings support the robustness of the measurement model and its appropriateness for subsequent analyses.

Table 2: Reliability and validity analysis

Construct	Cronbach’s Alpha	Composite Reliability (CR)	AVE
Perceived Greenwashing (PG)	0.84	0.88	0.65
Consumer Trust (CT)	0.87	0.90	0.69
Brand Equity (BE)	0.85	0.89	0.67
Digital Sustainability Literacy (DSL)	0.82	0.86	0.62

The findings of the structural model largely validate the proposed hypotheses. As shown in Table 3, perceived greenwashing exerts a significant adverse influence on

consumer trust (β = -0.41, p < 0.001), thereby confirming H1. Consumer trust was found to positively affect brand equity (β = 0.52, p < 0.001), providing support for H2. The mediation

assessment further revealed that perceived greenwashing indirectly influences brand equity through consumer trust ($\beta = -0.21, p < 0.01$), lending support to H3. In addition, perceived greenwashing demonstrated a significant negative association with social media sentiment ($\beta = -0.46, p < 0.001$), thereby supporting H5.

Table 3: Hypothesis testing results

Hypothesis	Path	β Value	p-value	Result
H1	PG \rightarrow CT	-0.41	<0.001	Supported
H2	CT \rightarrow BE	0.52	<0.001	Supported
H3	PG \rightarrow CT \rightarrow BE	-0.21	<0.01	Supported
H5	PG \rightarrow Sentiment	-0.46	<0.001	Supported

The moderating effect of digital sustainability literacy was also examined. As shown in Table 4, the interaction effect (PG \times DSL \rightarrow CT) is positive and statistically significant ($\beta = 0.21, p < 0.05$), supporting H4. This result indicates that digital sustainability literacy weakens the negative relationship between perceived greenwashing and consumer trust, suggesting that more informed consumers are less affected by misleading environmental claims.

Table 4: Moderation effect

Interaction Term	β Value	p-value	Result
PG \times DSL \rightarrow CT	0.21	< 0.05	Supported

The results of the social media sentiment analysis are presented in Table 5. A total of 2,400 user-generated comments were analyzed, revealing that 62% of the comments are negative, 23% are neutral, and only 15% are positive. This indicates a high level of consumer skepticism toward greenwashing practices in digital environments.

Table 5: Sentiment distribution

Sentiment type	Percentage (%)
Negative	62%
Neutral	23%
Positive	15%

Overall, the findings provide strong empirical support for the proposed conceptual framework, confirming the direct, indirect, and moderated relationships among perceived greenwashing, consumer trust, and brand equity.

Discussion

The findings of this study offer valuable insights into consumer reactions to greenwashing in digital environments. The finding that perceived greenwashing significantly negatively impacts consumer trust ($\beta = -0.41, p < 0.001$) suggests that consumers are very sensitive to misleading environmental claims. In today’s digital landscape, consumers are not merely passive recipients of information; they actively observe, compare, and evaluate the messages brands communicate.

This result supports the idea from signaling theory that when information provided by firms is seen as unreliable, its value

decreases. In the case of greenwashing, when environmental claims appear exaggerated or inconsistent, consumers begin to question their accuracy. Even minor doubts can significantly diminish trust, particularly on social media platforms where information disseminates rapidly and individuals openly express their opinions.

The positive relationship between consumer trust and brand equity ($\beta = 0.52, p < 0.001$) highlights the importance of trust in building strong brands. However, the findings also indicate that digital environments do not maintain a fixed level of trust. Unlike traditional marketing, where firms control most of the communication, social media allows consumers to express opinions, share experiences, and influence others. The value of a brand is influenced not only by the messages conveyed by companies but also by the ways in which consumers react to and engage with that information.

The mediation result further explains how greenwashing affects brand equity. The significant indirect effect ($\beta = -0.21, p < 0.01$) indicates that the impact of greenwashing primarily occurs through a decrease in consumer trust. Rather than immediately altering their evaluation of a brand, consumers first experience a loss of trust, which subsequently influences their perception of the brand. This finding correlates with attribution theory, which posits that consumers seek to comprehend the motivations behind a firm's actions. When consumers perceive greenwashing, they may view the firm as dishonest or self-serving. This perception diminishes trust and ultimately weakens brand equity.

An important contribution of this study is the moderating role of digital sustainability literacy. The positive interaction effect ($\beta = 0.21, p < 0.05$) suggests that consumers with higher knowledge and understanding of sustainability issues are less negatively affected by greenwashing. These consumers are better able to evaluate environmental claims and identify whether they are genuine or misleading. While they may not respond immediately to questionable claims, their tendency to analyze information more carefully can result in delayed reactions to misleading environmental assertions. This suggests that consumer awareness serves a protective function in digital environments.

The sentiment analysis results support these findings by showing that a large proportion of online comments (62%) reflect negative views toward greenwashing. The input suggests that skepticism regarding misleading sustainability claims is prevalent among social media users. This trend is evident not only in structured survey responses but also in organic digital conversations. Such observations enhance the reliability of the findings and demonstrate that consumer concerns about greenwashing are both authentic and widespread.

From a practical perspective, the findings underscore the necessity of honest and transparent communication. Companies must ensure that their sustainability claims are accurate, clear, and substantiated by evidence. In digital settings, false information can quickly destroy trust and hurt a brand's reputation. The results also suggest that improving consumer awareness and education can play a positive role, as

more informed consumers are better able to evaluate sustainability claims.

The study indicates that on digital platforms, trust is continually influenced by consumer experiences and interactions, particularly in relation to how brands communicate their sustainability efforts and the authenticity of those claims. Greenwashing presents not just an ethical dilemma but also a strategic risk that can damage long-term relationships between consumers and brands.

Conclusion

The present study examined the impact of perceived greenwashing on consumer trust and brand equity within social media environments by employing a mixed-methods approach. The findings provide robust evidence that perceived greenwashing significantly undermines consumer trust, which in turn serves as a key driver of brand equity. By establishing consumer trust as a mediating mechanism, the study demonstrates that the negative consequences of misleading sustainability claims are not merely direct but are transmitted through consumers' evaluative processes, thereby shaping overall brand perceptions.

The results further highlight the critical role of digital sustainability literacy in influencing consumer responses. The moderating effect indicates that consumers with higher levels of digital literacy are more capable of critically interpreting sustainability-related information, thereby reducing the detrimental impact of greenwashing on trust. This finding underscores the growing importance of informed and empowered consumers in digital environments, where exposure to diverse and often ambiguous information is increasingly common.

Moreover, the inclusion of social media sentiment analysis provides additional insights into consumer behavior in digital contexts. The predominance of negative sentiment toward greenwashing reflects heightened consumer awareness and an increasing tendency to question the authenticity of corporate sustainability claims. This suggests that social media platforms not only act as channels for information dissemination but also serve as spaces for collective evaluation and accountability, where misleading practices are likely to be challenged and publicly scrutinized.

From a theoretical perspective, the study advances the existing literature by integrating mediation, moderation, and sentiment analysis within a single conceptual framework. This integrative approach offers a more comprehensive understanding of how greenwashing influences consumer attitudes and brand-related outcomes in contemporary digital environments. The findings also reinforce the relevance of signaling theory and attribution theory in explaining how consumers interpret and respond to sustainability communication.

From a practical standpoint, the results emphasize the necessity for organizations to adopt transparent, consistent, and evidence-based sustainability communication strategies. Firms must recognize that misleading environmental claims can have long-term negative implications for consumer trust and brand equity, particularly in highly interactive digital environments.

Consequently, organizations should prioritize authenticity in sustainability initiatives, ensure the credibility of their claims, and actively engage with consumers to address concerns and feedback.

Despite its contributions, the study has certain limitations. The focus on urban consumers in India may restrict the generalizability of the findings across different cultural and geographical contexts. Additionally, the reliance on self-reported data and selected social media platforms may introduce potential biases. Future research may address these limitations by adopting cross-cultural comparative studies, employing longitudinal or experimental designs, and incorporating a wider range of digital platforms and analytical techniques. Furthermore, exploring additional moderating variables, such as environmental concern or regulatory awareness, may provide deeper insights into consumer responses to greenwashing.

Limitations

While this study offers valuable insights, it is essential to recognize certain limitations before fully grasping the scope of the findings.

The study primarily examines urban social media users, which may restrict the broader applicability of its results. Consumer behavior can differ significantly across various regions, cultures, and levels of digital access. For instance, individuals residing in rural areas or different countries may interpret sustainability claims in diverse ways, influenced by their varying levels of awareness, education, and exposure to environmental issues. Consequently, it is important to contextualize the findings specifically within the realm of digitally engaged urban consumers.

The study employs a cross-sectional research design, capturing consumer perceptions at a single point in time. Trust and brand perceptions can change as consumers gain more experience or come across new information. A longitudinal approach would provide deeper insights into how the effects of greenwashing evolve over time and whether they persist in the long term.

The use of self-reported data may introduce certain biases. Respondents might interpret questions in various ways or provide answers influenced by their personal beliefs and experiences. Although established measurement scales were utilized to enhance reliability, it is important to note that subjective perceptions cannot be eliminated. While the inclusion of sentiment analysis helps mitigate this limitation, it does not fully address it.

The sentiment analysis is restricted to data obtained from Instagram and X (Twitter). While these platforms are popular, they do not encompass all digital spaces. Other platforms may attract different user demographics and communication styles, potentially affecting consumer responses, which could lead to skewed results in sentiment analysis if these platforms are not included in the study. Automated sentiment analysis may face challenges in accurately interpreting complex expressions, including sarcasm and mixed opinions, which can lead to misinterpretations of consumer sentiment and affect the overall analysis of brand perception.

Fifth, the study focuses on a specific set of variables, including greenwashing, trust, brand equity, and digital sustainability literacy. Other factors, such as environmental concern, prior brand experience, or regulatory awareness, may also influence consumer responses. Including these variables in future research could provide a more comprehensive understanding of the issue.

Finally, the measurement of digital sustainability literacy is based on self-reported responses, which may not fully reflect actual knowledge or analytical ability. Future studies could use more objective methods to assess literacy levels and better understand its role in shaping consumer behavior.

Despite these limitations, the study provides a strong foundation for understanding how greenwashing affects consumers in digital environments. It also highlights important directions for future research to build on these findings and explore the topic in greater depth.

Reference

- AlQahtani FA. Trust or trickery? A systematic review of greenwashing and branding. *Int Rev Manag Mark.* 2025;15(6):424-432. doi:10.32479/irmm.20758.
- Alsaggaf HA. When green is not clean: A synthesis of evidence on greenwashing and consumer trust. *Int J Adv Appl Sci.* 2025;12(7):211-220. doi:10.21833/ijaas.2025.07.021.
- Álvarez-García O, Sureda-Negre J. Greenwashing and education: An evidence-based approach. *J Environ Educ.* 2023;54(4):265-277. doi:10.1080/00958964.2023.2238190.
- Areethai A, Jotaworn S, Wannasuth S. Synthesizing research on the impact of greenwashing on consumers, organizations, and sustainability. *Soc Sci Innov Appl Manag.* 2025. doi:10.60101/siam.2024.1522.
- Arpaci I, Karataş K, Zeybek G, Haktanir A. Environmental attitude, global social responsibility, and digital literacy: Predictors of green purchase intentions among emerging adults. In: *Current and Future Trends on Intelligent Technology Adoption*. Studies in Computational Intelligence. Vol. 1161. Springer, 2024, 79-96. doi:10.1007/978-3-031-61463-7_5.
- Balaskas S, Yfantidou I, Komis K. From awareness to action: Modeling sustainable behavior among winter tourists in the context of climate change. *Psychol Int.* 2025;7(3):72. doi:10.3390/psycholint7030072.
- Borah PS, Dogbe CSK, Marwa N. Generation Z's green purchase behavior: Do green consumer knowledge, consumer social responsibility, green advertising, and green consumer trust matter for sustainable development? *Bus Strategy Environ.* 2024;33(5):4530-4546. doi:10.1002/bse.3714.
- Chen YS, Chang CH. Greenwash and green trust: The mediation effects of green consumer confusion and green perceived risk. *J Bus Ethics.* 2013;114(3):489-500. doi:10.1007/s10551-012-1360-0.
- Connelly BL, Certo ST, Ireland RD, Reutzel CR. Signaling theory: A review and assessment. *J Manag.* 2011;37(1):39-67. doi:10.1177/0149206310388419.
- Delgado-Ballester E. Applicability of a brand trust scale across product categories. *Eur J Mark.* 2004;38(5-6):573-592. doi:10.1108/03090560410529222.
- Dixit P, Singh PB. The impact of green marketing on consumer behavior: A study of purchase patterns in personal care and cosmetic products in Uttar Pradesh, India. *ShodhKosh J Vis Perform Arts.* 2024;5(7). doi:10.29121/shodhkosh.v5.i7.2024.1909.
- Ha MT. Greenwash and green brand equity: The mediating role of green brand image, green satisfaction, and green trust, and the moderating role of green concern. *PLoS One.* 2022;17(11):e0277421. doi:10.1371/journal.pone.0277421.
- Hossain MZ, Hossain S, Urme UN. The impact of greenwashing on consumer trust and brand loyalty: The moderating role of industry type. *Eur J Innov Stud Sustain.* 2025;1(3):121-133. doi:10.59324/ejiss.2025.1(3).10.
- Hu X, Meng H. Digital literacy and green consumption behavior: Exploring dual psychological mechanisms. *J Consum Behav.* 2023;22(2):272-287. doi:10.1002/cb.2122.
- Isac N, Javed A, Radulescu M, Cismasu IDL, Yousaf Z, Serbu RS. Is greenwashing impacting on green brand trust and purchase intentions? Mediating role of environmental knowledge. *Environ Dev Sustain.* 2024;27(9):21329-21346. doi:10.1007/s10668-023-04352-0.
- Karunasingha A, Abeysekera N. The mediating effect of trust on consumer behavior in social media marketing environments. *South Asian J Mark.* 2022;3(2):135-149. doi:10.1108/SAJM-10-2021-0126.
- Kelley HH. The processes of causal attribution. *Am Psychol.* 1973;28(2):107-128. doi:10.1037/h0034225.
- Knight H, Haddoud MY, Megicks P. Determinants of corporate sustainability message sharing on social media: A configuration approach. *Bus Strategy Environ.* 2022;31(2):633-647. doi:10.1002/bse.2941.
- Ktisti E, Hatzithomas L, Boutsouki C. Green advertising on social media: A systematic literature review. *Sustainability.* 2022;14(21):14424. doi:10.3390/su142114424.
- Lu S, Sun Z, Huang M. The impact of digital literacy on farmers' pro-environmental behavior: An analysis with the Theory of Planned Behavior. *Front Sustain Food Syst.* 2024;8. doi:10.3389/fsufs.2024.1432184.
- Monfort A, López-Vázquez B, Sebastián-Morillas A. Building trust in sustainable brands: Revisiting perceived value, satisfaction, customer service, and brand image. *Sustain Technol Entrep.* 2025;4(3):100105. doi:10.1016/j.stae.2025.100105.
- Nguyen-Viet B, Tran CT, Ngo HTK. Corporate social responsibility and behavioral intentions in an emerging market: The mediating roles of green brand image and green trust. *Clean Respons Consum.* 2024;12:100170. doi:10.1016/j.clrc.2024.100170.

23. Nyilasy G, Gangadharbatla H, Paladino A. Perceived greenwashing: The interactive effects of green advertising and corporate environmental performance on consumer reactions. *J Bus Ethics*. 2014;125(4):693-707. doi:10.1007/s10551-013-1944-3.
24. Özel M. The impact of green media and information literacy education on greenwashing perception and sustainable consumption behavior. In: *Digital Literacy as a Catalyst for Critical Thinking*. Springer Nature Switzerland, 2025, 189-205. doi:10.1007/978-3-031-96720-7_9.
25. Risitano M, La Ragione G, Palazzo M, Parola F. Exploring the relevance of the metaverse for consumers: A systematic literature review. In: *Proceedings*. Springer Nature Switzerland, 2025, 469-475. doi:10.1007/978-3-031-80692-6_38.
26. Santos C, Coelho A, Marques A. A systematic literature review on greenwashing and its relationship to stakeholders: State of the art and future research agenda. *Manag Rev Q*. 2024;74(3):1397-1421. doi:10.1007/s11301-023-00337-5.
27. Shiva RK, Manoharan G. Brand equity management and marketing in the digital era. In: *Brand Creation and Management in the Phygital Era*. IGI Global, 2025, 201-224. doi:10.4018/979-8-3373-0948-4.ch008.
28. Spence M. Job market signaling. *Q J Econ*. 1973;87(3):355. doi:10.2307/1882010.
29. Sutanto WDR, Kussudyarsana K. The role of brand trust, brand image, brand equity on repurchase intention. *J Ilm Manaj Kesatuan*. 2024;12(1):119-128. doi:10.37641/jimkes.v12i1.2395.
30. Szabo S, Webster J. Perceived greenwashing: The effects of green marketing on environmental and product perceptions. *J Bus Ethics*. 2021;171(4):719-739. doi:10.1007/s10551-020-04461-0.
31. Tran NKH. Enhancing green brand equity through environmental reputation: The importance of green brand image, green brand trust, and green brand loyalty. *Bus Strategy Dev*. 2023;6(4):1006-1017. doi:10.1002/bsd2.294.
32. Yu L, Yi F. Digital literacy and green consumption in rural households: The moderating effect of social participation. *Appl Econ Lett*, 2024, 1-4. doi:10.1080/13504851.2024.2423708.