

Consumer Green Behavior and Sustainability Accounting-Based Marketing Innovation: A Systematic Framework for Eco-Brand Engagement

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ABSTRACT: This study develops a systematic framework that integrates consumer green behavior, sustainability-oriented marketing innovation, and sustainability accounting mechanisms in relation to eco-brand engagement. A qualitative systematic review was conducted using PRISMA 2020 procedures and thematic synthesis. In total, 38 peer-reviewed journal articles addressing green consumer behavior, sustainability marketing practices, sustainability disclosure, and eco-brand engagement were identified, screened, and analyzed. The literature suggests that eco-brand engagement is associated with the dynamic interaction among consumer environmental orientation (values, beliefs, attitudes, norms, perceived control, and social influence), sustainability-oriented marketing innovation (green products, processes, communication, and business models), and a sustainability accounting-based governance layer that may strengthen measurement, control, and disclosure credibility. Across the reviewed empirical and conceptual studies, engagement appears to be stronger when marketing innovation is supported by verifiable sustainability performance information, including environmental management accounting, sustainability performance indicators, and credible ESG reporting and assurance, which may help mitigate greenwashing risk and information asymmetry. The reviewed literature also indicates that stakeholder and institutional pressures are likely to influence both innovation priorities and disclosure practices, while engagement outcomes such as trust, loyalty, advocacy, and co-creation may provide feedback signals that inform subsequent strategic and resource allocation decisions. Overall, this framework points to eco-brand engagement not only as a behavioral and marketing-related outcome, but also as a governance- and accountability-related outcome linked to sustainability accounting.

Keywords: Eco-Brand Engagement, Consumer Green Behavior, Sustainability Accounting, ESG Disclosure Credibility, Sustainability-Oriented Marketing Innovation.



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INTRODUCTION

Over the past two decades, transformations in the global business environment have increasingly revealed a shift in the way consumers incorporate environmental responsibility into their purchasing choices. Pressure on firms to prioritize not only financial performance but also the ecological consequences of their production activities has generated new dynamics in marketing

practice (Abate et al., 2025; D. Li, 2025). Heightened public awareness of climate change, waste management, and the exploitation of natural resources has reshaped how brands are perceived, with environmental reputation emerging as a central criterion in product assessment. As a result, companies can no longer depend solely on the functional quality of the goods they offer; they are also required to demonstrate a consistent and credible commitment to environmental responsibility in the eyes of consumers (Ahmad et al., 2020; Chkanikova & Lehner, 2015).

Consumer behavior is becoming more complex in line with broader access to information and the proliferation of digital communication channels. Contemporary consumers no longer act as passive recipients of marketing content, but rather as active participants in constructing brand narratives through social media, online review platforms, and interest-based communities (Hua et al., 2025; Moisello & Pellicelli, 2025). This development has given rise to new forms of interaction between firms and consumers, in which emotional attachment, trust, and perceptions of long-term value increasingly shape the effectiveness of marketing strategies. Within this context, brands that are closely linked to environmental responsibility often attract greater public attention, yet they are also exposed to considerable risk when the messages they disseminate prove inconsistent with their actual corporate practices (Kumar'Ranjan & Kushwaha, 2017).

The tension between evolving market expectations and the practical constraints of corporate operations becomes more pronounced when innovations in marketing management fail to align with shifting consumer preferences. Numerous organizations encounter obstacles in embedding environmentally oriented strategies into established managerial structures and decision-making processes (Foziljonov et al., 2025; Senyapar et al., 2024). This misalignment produces discrepancies between the sustainability claims conveyed in external communications and the practices implemented internally. In turn, consumers may develop skepticism toward brands' environmental assertions, which, over the long term, can gradually erode trust and undermine relationships that have been cultivated over many years (Nascimento & Loureiro, 2024; Pancić et al., 2023).

Intensifying competition among brands in articulating sustainability narratives has contributed to a marketplace saturated with environmentally themed messages. Under these conditions, meaningful differentiation becomes increasingly challenging, as many companies rely on similar symbols, terminologies, and communication styles (Shajrawi et al., 2025). In such a competitive setting, consumer engagement with brands is shaped less by mere exposure to sustainability claims and more by direct, meaningful experiences that are perceived as coherent and enduring over time. When these experiences fail to correspond with expectations, consumers are inclined to shift their preferences toward alternatives they regard as more authentic and reliable (Daou et al., 2025a; Garg et al., 2025).

Managers who attempt to respond to shifting market behavior often encounter hard limitations in resources, organizational cultures that resist change, and stakeholder expectations focused on short-term performance. These conditions produce a strategic dilemma in which companies must decide whether to channel resources into long-term innovations that involve considerable risk or to preserve established operating patterns that appear more stable, and the uncertainty that follows influences the quality of marketing decisions and weakens the company's capacity to manage long-term relationships with increasingly critical and selective consumers (Das et al., 2024; Kulikova & Kondratenko, 2024).

Differences in market characteristics across countries further complicate efforts to design and implement marketing strategies that meet environmental expectations. Levels of public awareness, prevailing social norms, and the strength of government regulation vary widely, creating distinct challenges for multinational firms (Xiao et al., 2023; Zaman & Kusi-Sarpong, 2024). A strategy that proves effective in one market may be difficult to apply with the same level of success in another, so companies must constantly reinterpret and adjust brand messages in line with local cultural sensitivities and expectations. When this process of adaptation is misjudged, consumers may respond with resistance or even generate controversies that inflict long-lasting damage on the brand's image (Singh et al., 2024; Trzeciak et al., 2022).

The overall picture shows that the connection between increasingly environmentally conscious consumer behavior and patterns of innovation in marketing management remains a complex topic that has not yet been mapped systematically in the scientific literature. Research findings are scattered, methodological approaches differ, and study settings span diverse geographic contexts, so the relationship between these two domains is still only partially understood and not fully organized into a coherent framework. Practitioners and academics therefore face difficulties when they seek to develop strategies that are consistent, replicable, and applicable across a variety of market conditions (Salnikova et al., 2022; Shahid et al., 2024).

Rapid advances in digital platforms accelerate the speed at which consumer perceptions are formed and reshaped. Information circulates so quickly that certain environmental issues can attract viral attention within a matter of hours, exposing brands to sharp and sudden shifts in public opinion (Rusyani et al., 2021; Salnikova et al., 2022). Companies that fail to manage communication and managerial innovation in a careful and timely manner may face reputational damage that is far more severe than in the pre-digital era. This reality highlights the need for a structured understanding of how consumer engagement with eco-brands emerges, is sustained, and can gradually deteriorate over time.

Eco-brand engagement in this study refers to a multidimensional form of consumer connection with environmentally oriented brands, reflected in trust, loyalty, advocacy, participation, and co-creation around sustainability-related brand value. In this sense, eco-brand engagement is not limited to favorable attitudes or purchase intention, but encompasses ongoing relational and behavioral outcomes shaped by how consumers perceive the credibility and consistency of a brand's environmental commitments. Sustainability accounting mechanisms, meanwhile, refer to the formal systems used to measure, control, and communicate sustainability performance, including environmental management accounting (EMA), carbon accounting, sustainability performance indicators, ESG reporting, integrated reporting, and assurance. These mechanisms provide the governance and disclosure infrastructure through which sustainability claims can be translated into verifiable organizational information. This positioning is consistent with the manuscript's current framing of eco-brand engagement as an outcome involving trust, loyalty, advocacy, participation, and co-creation, and of sustainability accounting as a governance and control system that supports measurement, transparency, and disclosure credibility.

Despite growing interest in green consumer behavior and sustainability-oriented marketing, the literature remains fragmented in two important ways. First, marketing-oriented studies have substantially explained eco-brand outcomes through consumer values, attitudes, social influence,

green communication, and innovation practices, but they tend to treat credibility as a communication issue rather than as an outcome of formal governance and accounting-based verification. In the manuscript's own synthesis, most prior work is described as concentrating on consumer psychology and social factors, while only a smaller subset explicitly examines marketing innovation and eco-brand engagement in an integrated way.

Second, accounting-oriented studies have provided important insights into environmental measurement, reporting, accountability, and disclosure credibility, but they generally stop short of explaining how these mechanisms connect to downstream engagement outcomes such as trust, loyalty, advocacy, and co-creation. The current manuscript already shows that sustainability accounting is discussed as a bridge between operational sustainability practices and market-facing claims, yet the engagement consequences of that bridge have not been sufficiently synthesized across the literature. This leaves a conceptual gap between, marketing studies that emphasize consumer response but under-specify governance credibility and accounting studies that emphasize control and disclosure but under-explain engagement outcomes.

This study addresses that gap by systematically synthesizing empirical and conceptual studies to develop an integrated framework linking consumer environmental orientation, sustainability-oriented marketing innovation, sustainability accounting mechanisms, and eco-brand engagement. By doing so, the study aims to explain not only how environmentally oriented marketing initiatives are developed, but also how their credibility is supported through governance and disclosure mechanisms that may help sustain stronger eco-brand engagement over time. This contribution also aligns with the manuscript's research questions, which explicitly seek to identify how these four constructs are conceptualised, related, and synthesised into a single framework.

The complexity of these developments strengthens the need for a systematic framework that brings together the dynamics of consumer behavior, innovation in marketing management, and the degree of engagement with environmentally oriented brands. Efforts to design sustainable marketing strategies become vulnerable to being sporadic, inconsistent, and difficult to evaluate when such a structured mapping is absent. Deeper studies are therefore needed to build a more comprehensive and systematic approach for understanding and managing the relationship between consumers, managerial innovation, and eco-friendly brand engagement in the midst of increasingly dynamic and competitive business conditions.

This study contributes to ongoing conversations in both marketing and accounting by reconsidering how eco-brand engagement is theorised. Within the marketing literature, eco-brand engagement is commonly explained through consumer values, environmental concern, green communication, and sustainability-oriented innovation. While these perspectives are important, they tend to leave one issue underdeveloped: why sustainability initiatives are persuasive in some cases yet fail to generate trust in others. The present review argues that this question cannot be addressed adequately without considering the credibility of the information infrastructure that supports environmental claims. In this respect, the study extends marketing discussions by showing that eco-brand engagement is tied not only to how sustainability is communicated, but also to whether those claims are supported by measurable and verifiable sustainability performance. At the same time, the study adds to the accounting literature by moving beyond the conventional treatment of sustainability accounting as an internal apparatus of measurement,

control, and reporting. The reviewed literature suggests that mechanisms such as environmental management accounting, sustainability indicators, ESG reporting, integrated reporting, and assurance also carry outward-facing significance, as they shape how corporate sustainability efforts are interpreted by consumers and other stakeholders. Seen from this perspective, sustainability accounting does not merely support governance; it also contributes to the credibility conditions under which trust, loyalty, advocacy, and broader forms of eco-brand engagement may develop. Taken together, these insights offer a more integrated theoretical perspective by bringing market-facing innovation and accounting-based accountability into the same analytical frame. In doing so, the study positions eco-brand engagement not simply as a marketing outcome, but as an outcome that is also conditioned by governance, transparency, and the credibility of sustainability disclosure.

Literature Review

Green Consumer

A green consumer is commonly understood as an individual who engages in environmentally friendly practices and/or chooses eco-friendly products instead of conventional alternatives (Ndhlovu & Maree, 2022; Pranta et al., 2025). Product choices are shaped by the person's own awareness of environmental problems, so individuals who fall into the green consumer category tend to favor goods and services that minimize ecological harm. Several authors emphasize that green consumers think about the environmental consequences of their choices before buying and consuming a product (Purcărea et al., 2022).

Mills in (Moschko et al., 2023) describes Green Consumer Behavior as a pattern of consumption in which environmental considerations are applied to every stage of the decision and use process. Environmentally conscious behavior is explained through seven key variables:

- a) Environmental attitude, meaning an individual's cognitive evaluation of the importance of protecting the environment;
- b) Environmental concern, referring to the degree of emotional involvement with environmental issues;
- c) Perceived seriousness of environmental problems;
- d) Perceived environmental responsibility;
- e) Perceived effectiveness of one's own pro-environmental behavior;
- f) Perceived self-image as someone who contributes to environmental protection; and
- g) Peer influence or social pressure arising from reference groups.

Green consumer behavior (GCB) reflects actions that are shaped by an individual's concern for the environment and appears in the way people search for, purchase, use, assess, and dispose of products. A stronger orientation toward environmental care tends to strengthen the intention to purchase environmentally friendly products (S. Li et al., 2022). Environmental awareness itself is described as a multidimensional construct that includes cognitive, attitudinal, and behavioral components. Consumers who possess a high level of environmental awareness are more likely to choose eco-friendly products than those who devote less attention to ecological issues. Measures of environmental awareness therefore show a closer relationship to purchasing habits than to

sociodemographic or personality variables (Kumar, 2022). The level of concern for environmental sustainability can be interpreted in part through actual purchasing patterns for environmentally friendly products (Kobets et al., 2024).

Green Marketing & Eco-Branding

Green marketing is commonly framed as an extension of conventional marketing that explicitly incorporates environmental goals and societal welfare. Peattie describes it as a holistic management process that identifies, anticipates, and satisfies the needs of customers and society in a profitable and environmentally responsible way, highlighting that “green” concerns should permeate the entire marketing system rather than sit in a promotional niche (Khalid et al., 2024; Kim & Lee, 2023). Conceptual work by Banerjee and colleagues portrays green marketing as the integration of environmental considerations into product development, pricing, distribution, and communication, thereby linking corporate environmental strategy with market positioning (Esangbedo et al., 2024; Forliano et al., 2025).

Eco-brands and sustainable brands represent more specific manifestations of green marketing. (Duan & Qutayan, 2024) describe eco-brands as names, symbols, or designs that help consumers identify products with lower environmental impact and distinguish them from conventional alternatives. (De Ruyter et al., 2022) characterizes eco-branding as a technique through which companies communicate their contribution to environmental stewardship and long-term sustainability goals, shifting brand identity toward ecological responsibility. Work on sustainable branding broadens the lens by including social as well as environmental dimensions, defining sustainable brands as those that embed ESG (environmental, social, governance) principles across operations, culture, and communication rather than treating sustainability as a campaign theme (Shahid et al., 2024). Regulators increasingly scrutinize environmental claims: recent rulings have banned major fashion and finance advertisements for overstating sustainability credentials, illustrating how unsubstantiated claims damage both brand reputation and broader consumer confidence in green communication (Forliano et al., 2025; Kim & Lee, 2023; Kobets et al., 2024). Studies of green advertising and social media reveal that vividness, interactivity, and positive emotional tone in brand posts drive stronger cognitive, emotional, and behavioral engagement with sustainability messages, especially when combined with credible eco-labels or third-party certifications (Chen & Yang, 2023; Daou et al., 2025b).

Consumer Engagement with Eco-Brands

Consumer engagement has emerged as a key construct in contemporary branding research and is typically defined as a multidimensional state comprising cognitive, emotional, and behavioral components directed toward a focal brand. (Ahmed et al., 2024) conceptualise consumer brand engagement as positively valenced brand-related cognitive processing, affection, and activation that occur during or in response to brand interactions. (Arya et al., 2022) extend this view by framing engagement as context-dependent, interactive experiences that go beyond transaction and include co-creative and relational aspects, this body of work positions engagement as distinct from,

yet related to, traditional constructs such as satisfaction, commitment, and involvement, with specific consequences for loyalty and word-of-mouth.

Digital platforms have intensified interest in engagement, since they make cognitive, emotional, and behavioral responses more observable. Empirical research examining brand posts on social media shows that post type, vividness, interactivity, and valence each have different effects on consumers' cognitive attention, affective responses, and activation behaviors such as commenting or sharing. Studies in diverse categories—from beverages to cosmetics and e-commerce—indicate that social media engagement reinforces brand trust and repurchase intention, especially when the online experience is consistent with the brand's claimed values (Chen & Yang, 2023; Daou et al., 2025b). This work suggests that engagement serves as a bridge between marketing communication and long-term relational outcomes. A study on greenwashing expectations finds that perceived risk of deception does not always reduce green purchase decisions directly; rather, green trust, consumer brand engagement, and green word-of-mouth fully mediate the relationship (De Ruyter et al., 2022; Duan & Qutayan, 2024). These findings imply that eco-brand engagement can be interpreted as a psychological filter through which consumers interpret and respond to sustainability communication. Studies examining greenwashing confirm that misleading or exaggerated claims undermine trust, weaken engagement, and ultimately reduce intention to purchase green products (Esangbedo et al., 2024; Forliano et al., 2025). These insights collectively suggest that eco-brand engagement is best understood as an outcome of credible, value-congruent communication and meaningful environmental practices, rather than as a response to surface-level “eco” aesthetics alone.

Marketing Management Innovation in the Context of Sustainability

Research on green innovation situates marketing management within broader organizational efforts to redesign products, processes, communication, and business models for sustainability. Studies on green innovation practices show that firms adopting environmentally oriented product and process innovations achieve better environmental and organizational performance, particularly when innovation is supported by strong stakeholder pressure and dynamic capabilities. Work in manufacturing and SME contexts indicates that green market orientation encourages the development of green product innovation, which in turn enhances both competitive success and sustainable performance (Forliano et al., 2025; Kim & Lee, 2023; Kobets et al., 2024). These findings position marketing not only as a communication function but also as a driver of strategic innovation choices.

Process innovation complements product changes by targeting the environmental performance of supply chains and internal operations. Reviews of green innovation practices report that cleaner production methods, energy-efficient logistics, and environmentally responsible sourcing contribute to improved environmental and financial outcomes when integrated into a coherent strategy (S. Li et al., 2022; Ndhlovu & Maree, 2022; Pranta et al., 2025). Studies of green innovation in SMEs show that process changes often start with simple efficiency improvements but gradually evolve toward more systemic redesigns of procurement and waste management, especially when supported by external incentives and capacity-building programs. Research on green marketing

strategies confirms that process-level sustainability practices enhance consumer perceptions of credibility, particularly when firms communicate these efforts transparently rather than focusing solely on end-product claim (Purcărea et al., 2022; Rusyani et al., 2021).

Sustainability Accounting as Governance and Control Mechanism

The integration of sustainability into marketing innovation cannot be separated from the accounting systems that measure, control, and communicate environmental performance. While sustainability-oriented marketing practices such as eco-branding, green advertising, and product innovation shape consumer perception, these initiatives require credible internal governance mechanisms to ensure that sustainability claims are aligned with measurable organizational actions. In this context, sustainability accounting serves as a critical bridge between operational sustainability practices and market-facing marketing innovation. It provides structured information for managerial decision-making, strengthens accountability, and reduces the risk of reputational damage arising from misleading environmental claims. Sustainability accounting-based governance plays an increasingly important role in the era of heightened consumer skepticism and regulatory pressure (Agustia, 2020; Dewi, 2025; Remlein, 2021).

Environmental Management Accounting (EMA)

Environmental Management Accounting (EMA) refers to accounting practices that identify, measure, and allocate environmental costs and environmental resource consumption to support internal managerial decisions. EMA differs from conventional accounting because it explicitly integrates environmental dimensions such as emissions, energy use, waste, and material efficiency into cost accounting and performance evaluation. EMA enables firms to translate sustainability objectives into measurable financial and non-financial indicators, thereby allowing sustainability-oriented marketing innovation to be grounded in verifiable internal data (Agustia, 2020; Remlein, 2021).

A key component of EMA is carbon accounting, which focuses on the systematic measurement and reporting of greenhouse gas emissions generated through production, distribution, and consumption processes. Carbon accounting supports managerial decision-making by providing information about carbon footprints, emission intensity per unit of product, and potential carbon liabilities under regulatory schemes (Zyznarska-Dworczak, 2020). This accounting mechanism becomes strategically relevant because carbon footprint metrics increasingly influence consumer evaluation of eco-brands. Firms that integrate carbon accounting into their marketing innovation strategies can provide stronger evidence to support claims of low-carbon products and environmentally responsible operations.

EMA strengthens green cost transparency, which refers to the organizational ability to make environmental costs visible, traceable, and explainable both internally and externally. Green cost transparency enhances managerial control by supporting sustainability budgeting, investment planning, and operational improvements.

Sustainability Performance Measurement Systems

Beyond measuring environmental costs, firms require performance measurement systems capable of evaluating sustainability achievements and aligning them with strategic objectives. Sustainability performance measurement systems provide structured indicators that guide decision-making, monitor progress, and support strategic evaluation. These systems are essential because sustainability marketing innovation is not only about product differentiation but also about maintaining long-term consistency between sustainability narratives and actual organizational performance (Nguyen, 2025a).

One of the most widely discussed frameworks is the Sustainability Balanced Scorecard (SBSC), which extends the traditional balanced scorecard by incorporating sustainability indicators into financial, customer, internal process, and learning perspectives. SBSC allows firms to measure sustainability performance systematically while maintaining strategic alignment with organizational objectives. Sustainability marketing innovation becomes measurable in terms of consumer trust, environmental process improvements, and financial performance outcomes. This approach may support stronger eco-brand engagement because it ensures that sustainability is not treated as a promotional tool but as a strategic organizational capability.

Firms increasingly adopt ESG Key Performance Indicators (ESG KPIs) to measure performance across environmental, social, and governance dimensions. ESG KPIs provide quantifiable indicators such as emission reduction rates, waste recycling ratios, sustainable sourcing percentages, and governance compliance metrics. These indicators are increasingly used by investors, regulators, and consumers as signals of sustainability commitment. For marketing innovation, ESG KPIs provide measurable evidence that strengthens sustainability storytelling and reduces the risk of greenwashing perceptions.

ESG Reporting and Sustainability Disclosure

While EMA and sustainability performance measurement systems strengthen internal governance, sustainability accounting also plays a crucial role in external disclosure and reporting. Consumers, regulators, investors, and stakeholders increasingly demand sustainability information that is standardized, comparable, and credible. Sustainability reporting therefore becomes a key mechanism through which firms communicate environmental performance and legitimize sustainability marketing claims.

A widely adopted reporting framework is the Global Reporting Initiative (GRI), which provides standardized guidelines for sustainability disclosure. GRI emphasizes transparency in reporting environmental impact, resource use, waste management, emissions, and social responsibility. By adopting GRI standards, firms can strengthen the credibility of sustainability communication and demonstrate accountability to stakeholders. This credibility becomes highly relevant in marketing contexts because consumers increasingly evaluate eco-brands based on publicly disclosed sustainability information rather than on advertising messages alone (Caraiani et al., 2015; Yaskun et al., 2025).

The growing relevance of the International Sustainability Standards Board (ISSB) reflects a global movement toward unified sustainability disclosure standards. ISSB standards aim to integrate sustainability information into financial reporting systems, thereby reducing the separation between sustainability narratives and financial accountability (Nguyen, 2025b). This shift strengthens the argument that sustainability marketing innovation must be supported by formal accounting-based disclosure systems. Firms adopting ISSB-aligned reporting can provide stronger signals of sustainability commitment, enhancing stakeholder trust and eco-brand engagement.

Although earlier studies have recognised the fragmented character of the literature on green consumer behaviour, sustainable marketing, and eco-brand outcomes, the integrative frameworks proposed so far remain limited in what they are able to explain. Much of this work continues to centre on psychological and social antecedents, such as attitudes, norms, environmental concern, awareness, and peer influence, or on market-facing variables including green communication, eco-brand positioning, and purchase intention. The pattern is also evident in the present review, where the literature is still dominated by studies on green purchase intention and behaviour, while work examining the link between sustainability-oriented marketing innovation and broader forms of eco-brand engagement is comparatively scarce and less fully developed conceptually.

A more important limitation lies in the level at which these earlier frameworks operate. In most cases, engagement is treated primarily as a consumer response to values, symbolic cues, or communication strategies. This leaves relatively little room to explain how sustainability claims become credible, why some green narratives foster trust while others invite scepticism, or how accountability and disclosure practices shape the reception of environmental positioning. Such omissions matter more as consumers and other stakeholders increasingly rely on publicly available sustainability information, rather than promotional claims alone, when evaluating the authenticity of eco-brands.

The present study seeks to advance this conversation by introducing a dimension that has largely remained peripheral in earlier models, namely the role of sustainability accounting mechanisms in shaping eco-brand engagement. By incorporating environmental management accounting, sustainability performance measurement, ESG reporting, integrated reporting, and assurance into the framework, the study offers a fuller explanation of how sustainability-oriented marketing innovation gains legitimacy and becomes meaningful to external audiences. The distinction of the proposed framework, therefore, lies not simply in combining familiar constructs, but in showing that eco-brand engagement is also conditioned by governance, measurement, and disclosure credibility. From this perspective, engagement is better understood not only in terms of what firms communicate or how consumers respond, but also in terms of whether environmental claims are supported by verifiable organisational practices.

Research Framework

The proposed framework integrates four interrelated domains within a sustainability governance system: (1) consumer environmental orientation, (2) sustainability-oriented marketing innovation, (3) sustainability accounting-based governance and control mechanisms, and (4) eco-brand engagement outcomes. By positioning sustainability accounting can be understood as shaping and

credibility-supporting dimension, the model extends beyond a behavioral–marketing view and emphasizes that eco-brand engagement is shaped by both market strategies and accountability structures that support measurable sustainability performance.

The proposed framework departs from the dominant line of research in which eco-brand outcomes are explained largely through a sequence that runs from consumer environmental orientation to marketing response and then to engagement. In that stream, the main analytical emphasis typically falls on values, beliefs, attitudes, norms, perceived control, social influence, green communication, eco-brand positioning, and purchase-related responses. The logic of these models has been useful in clarifying how environmentally oriented consumers respond to sustainability cues in the marketplace, yet it tends to stop at the level of behavioural and marketing explanation. In the present review, this pattern remains visible in the concentration of prior studies on green purchase intention, green behaviour, communication effects, and brand positioning, whereas the link between sustainability-oriented marketing innovation and broader eco-brand engagement is still less fully elaborated.

What remains insufficiently addressed in those frameworks is the question of credibility. More precisely, earlier models say relatively little about how sustainability claims become trustworthy, how firms substantiate environmental positioning beyond promotional communication, or how disclosure quality and accountability mechanisms influence the development of trust, loyalty, advocacy, participation, and co-creation. This omission is important because the manuscript's own synthesis shows that consumers increasingly evaluate eco-brands not only through symbolic or communicative signals, but also through the availability of structured and publicly disclosed sustainability information. The framework therefore introduces sustainability accounting mechanisms as a missing layer between sustainability-oriented marketing innovation and eco-brand engagement. By incorporating environmental management accounting, sustainability performance measurement, ESG reporting, integrated reporting, and assurance, the model addresses a blind spot left by earlier behavioural and communication-centred approaches: the absence of an explicit governance and accounting-based explanation of why some sustainability initiatives gain legitimacy and sustain engagement more effectively than others.

Consumer environmental orientation (values, beliefs, attitudes, awareness, moral responsibility, perceived control, and social influence) provides the behavioral foundation that drives green purchase/use behavior and expectations for transparency and responsibility, consistent with TPB and VBN perspectives. Firms respond through sustainability-oriented marketing innovation (green products/processes, sustainable supply chains, green communication, eco-brand positioning, digital engagement, and circular business models), but credibility depends on sustainability accounting mechanisms such as EMA and carbon accounting, sustainability performance measurement (SBSC and ESG KPIs), green ROI and sustainability-adjusted profitability, ESG reporting (GRI/ISSB), integrated reporting, and assurance. These accounting systems enable measurement, control, transparency, and reduced information asymmetry, thereby strengthening disclosure credibility, lowering greenwashing risk, and reinforcing eco-brand engagement (trust, loyalty, advocacy, participation, and co-creation) through a continuous strategic feedback loop.

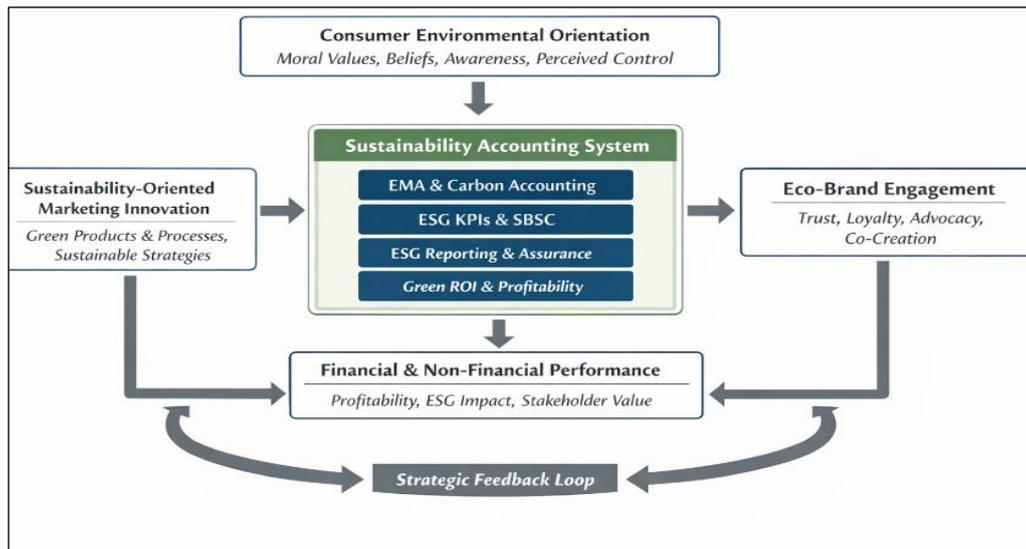


Figure 1. Research Framework

Responding to these limitations, the present study addresses the following research questions:

- RQ1:** How have recent empirical and conceptual studies conceptualised and operationalised consumer environmental orientation, sustainability-oriented marketing innovation, sustainability accounting mechanisms, and eco-brand engagement?
- RQ2:** What patterns of relationships among consumer environmental orientation, sustainability-oriented marketing innovation, sustainability accounting systems, and eco-brand engagement can be identified across the existing literature?
- RQ3:** How does sustainability accounting mediate and legitimize the relationship between marketing innovation for sustainability and eco-brand engagement?
- RQ4:** How can these interrelated mechanisms be synthesised into an integrated sustainability accounting-based framework that explains the development and maintenance of eco-brand engagement in increasingly environmentally conscious markets?

METHOD

This study adopts a qualitative systematic review design to develop an in-depth understanding of how growing environmental sensitivity in consumer behavior relates to innovation in marketing management and the strengthening of eco-brand engagement. The phenomenon under examination involves complex meanings, interaction patterns, and social constructions that do not lend themselves to explanation through statistical analysis alone. A qualitative orientation makes it possible to interpret these complexities across diverse academic findings and to connect a fragmented body of literature into a coherent conceptual framework (Cabrera & Cabrera, 2023).

The review follows the PRISMA 2020 guideline for reporting systematic reviews. The study selection process comprised four main stages: identification, screening, eligibility assessment, and final inclusion of studies. Relevant records were identified through structured searches in major

academic databases and through manual screening of reference lists in key articles. Duplicate records were removed before further assessment. Titles and abstracts were then screened using predefined criteria to determine whether the studies addressed consumer environmental orientation, sustainability-oriented marketing practices, or eco-brand engagement. Full-text versions of potentially relevant articles were retrieved and examined in detail to confirm their relevance and methodological adequacy (Palomino et al., 2019).

This review followed the PRISMA 2020 guideline for reporting systematic reviews. The search was conducted between 10 and 14 March 2025 across three databases, namely Scopus, Web of Science, and ScienceDirect. The time window was restricted to publications from 2010 to 2025 in order to capture the more recent development of research on green consumer behaviour, sustainability-oriented marketing, sustainability disclosure, and eco-brand engagement. Only journal articles published in English were considered. Additional filters were applied in line with the indexing and subject classifications available in each database, including business, management, accounting, and related social science categories, as reflected in Table 1. The initial search yielded 612 records, comprising 210 from Scopus, 185 from Web of Science, and 120 from ScienceDirect, with the remaining records identified through complementary manual screening of references from key studies.

All records were exported to Mendeley Reference Manager for deduplication. Duplicate records were removed through a combination of automated matching and manual verification based on title, author name, publication year, journal, and DOI where available. A total of 92 duplicate records were removed before the screening stage, leaving 520 records for title and abstract screening. Screening was conducted in two stages by two reviewers. In the first stage, titles and abstracts were reviewed against predefined inclusion criteria. Studies were retained when they addressed at least one of the following domains in a substantive way: consumer environmental orientation, sustainability-oriented marketing practices or innovation, sustainability accounting or disclosure mechanisms, and eco-brand engagement. In the second stage, the full texts of potentially relevant studies were assessed to confirm conceptual relevance, empirical or theoretical contribution, and alignment with the scope of the review. This process resulted in 520 records being screened, 430 being excluded at the title and abstract stage, 90 full-text articles being assessed for eligibility, and 38 studies being retained in the final synthesis.

Where disagreements arose regarding study inclusion, these were resolved through discussion and re-examination of the article in relation to the inclusion criteria. When consensus could not be reached at the initial stage, the final decision was made through agreement between the two reviewers after a second round of independent assessment. This procedure was adopted to strengthen consistency and transparency in the study selection process. With regard to study quality, the review adopted a qualitative thematic synthesis approach aimed primarily at conceptual integration rather than effect-size aggregation. No formal risk-of-bias instrument was applied, as the review included a mix of empirical and conceptual studies and was designed for interpretive thematic synthesis rather than quantitative meta-analysis. However, methodological adequacy, conceptual relevance, clarity of construct definition, and alignment with the review objectives were considered during the full-text assessment stage.

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Following study selection, the included articles were coded and synthesised thematically. The analysis proceeded from descriptive coding of constructs, practices, and reported relationships to the development of broader analytical themes linking consumer environmental orientation, sustainability-oriented marketing innovation, sustainability accounting mechanisms, and eco-brand engagement outcomes. A later stage of analysis compared themes across studies and contexts in order to identify recurrent patterns and support the development of the proposed framework.

Table 1. Search Strategy / Database Overview

No	Database	Main keywords / search string (simplified)	Time period covered	Filters / limits applied	Records identified
1	Scopus	TITLE-ABS-KEY("green consumer*" OR "pro-environmental consumer" OR "green purchase") AND TITLE-ABS-KEY(marketing OR branding OR "marketing innovation" OR "eco-brand*" OR "sustainable brand*")	2010–2025	Article; journal; English; subject area: business, management, social sciences	210
2	Web of Science	TS=("green consumer*" OR "green purchase*" OR "pro-environmental behavior") AND TS=(marketing OR "green marketing" OR branding OR "eco-brand" OR "sustainable brand*" OR "brand engagement")	2010–2025	Article; SSCI/SCI indexed journals; English	185
3	ScienceDirect	("green consumer" OR "green consumption" OR "green purchase") AND ("green marketing" OR "sustainable marketing" OR "eco-brand" OR "sustainable brand" OR "consumer engagement")	2010–2025	Research articles; subject area: business & management; English	120
4	Emerald Insight	("green consumer" OR "pro-environmental consumer") AND ("green marketing" OR "sustainable marketing" OR branding OR "eco-brand engagement" OR "sustainable brand engagement")	2010–2025	Peer-reviewed journal articles; English	60
5	Google Scholar	"green consumer behavior" AND ("eco-brand" OR	2010–2025	Articles; only sources	37

"eco brand" OR "green branding" OR "sustainable branding" OR "consumer brand engagement")	published in academic journals
Total	612

Only studies that provided empirical evidence or clearly articulated conceptual contributions related to the core themes of this review were retained. After all stages of the selection process had been completed, 38 studies were included in the final sample for qualitative synthesis. The overall selection process is summarised in the PRISMA 2020 flow diagram (Figure 1).

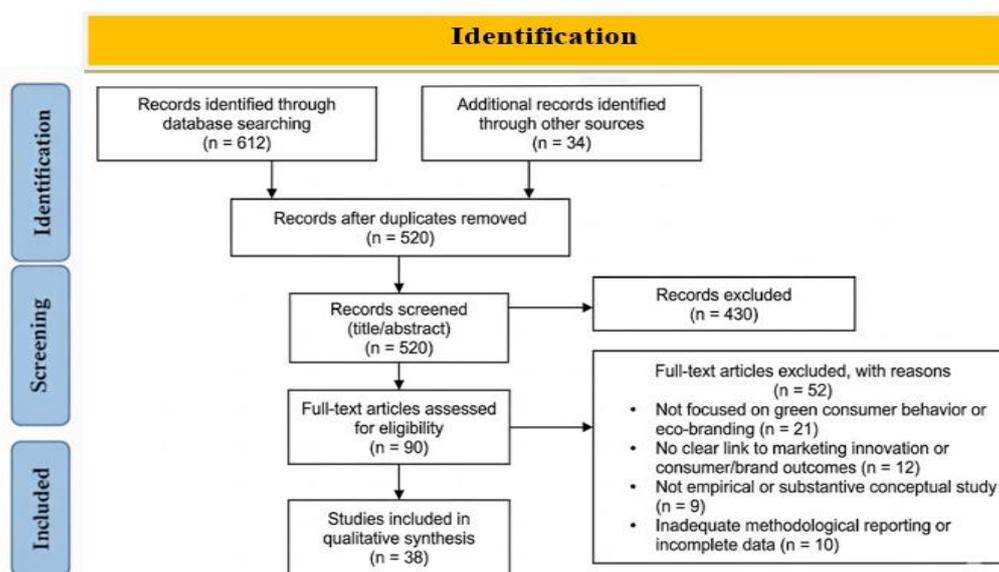


Figure 2. PRISMA 2020 flow diagram of the study selection process

Inclusion and Exclusion Criteria

Study inclusion focused on articles that examined at least one of the following domains: pro-environmental consumer behavior (including green purchase intention and behavior), green or sustainable marketing practices, eco-branding, or consumer engagement with environmentally oriented brands. Only peer-reviewed journal articles were considered, and publications had to provide sufficient methodological information to support qualitative interpretation. Studies were excluded when they dealt solely with environmental policy or corporate sustainability at a macro level without a consumer or marketing perspective, when they lacked clear conceptualisation of key constructs, or when they offered purely opinion-based commentary with no substantive analytical contribution. Ambiguous cases were resolved through repeated reading and discussion, prioritising studies that clearly illuminated the relationships among consumer environmental orientation, marketing innovation, and eco-brand engagement.

The criteria were established to preserve the conceptual boundaries of the review while ensuring that the included studies could support meaningful thematic interpretation. Inclusion was limited to studies engaging directly with at least one of the review's focal domains, as the objective was

not to map sustainability literature broadly, but to synthesise work capable of explaining the relationships among consumer environmental orientation, marketing innovation, and eco-brand engagement. Peer-reviewed journal articles were prioritised to ensure scholarly quality, and methodological transparency was required so that findings could be interpreted reliably within the qualitative synthesis. Exclusion criteria were applied to remove studies that were too distant from the consumer–marketing interface, too conceptually underdeveloped, or too opinion-driven to contribute analytically to framework building. Ambiguous cases were reviewed iteratively in order to maintain consistency and retain studies with the strongest relevance to the review’s integrative aim.

Data Extraction

Information from each included study was extracted using a structured template. In total, 38 peer-reviewed journal articles met the inclusion criteria and were subjected to detailed data extraction and analysis. The template captured author(s), year of publication, country or context, research design, sample characteristics (where applicable), focal constructs, theoretical foundations, and key findings related to consumer environmental orientation, sustainability-oriented marketing innovation, and eco-brand engagement. Particular emphasis was placed on how each study defined its core variables and on the mechanisms proposed to link consumer behavior with organizational practices and brand-level outcomes. Extracted information was compiled into a comparative matrix that provided an overview of the evidence base. This matrix forms the basis for Table 1, which summarises the characteristics and main contributions of the thirty-eight reviewed articles.

Data Analysis: Thematic Synthesis

Data analysis followed a thematic synthesis procedure that combined elements of thematic analysis with an interpretive review approach. The process began with repeated reading of all included articles to build familiarity with their aims, conceptual models, methods, and main results. Segments of text that reported findings or theoretical insights concerning consumer environmental orientation, sustainability-oriented marketing innovation, or eco-brand engagement were coded line by line. Initial codes captured both explicit statements and underlying meanings, including drivers of green behavior, forms of marketing innovation, and patterns of consumer–brand interaction.

Coded segments were then organised into descriptive themes that reflected how the literature conceptualised and operationalised the main constructs. Codes relating to values, beliefs, norms, attitudes, awareness, and perceived behavioral control were grouped under consumer environmental orientation. Codes describing eco-product design, green packaging, sustainability communication, digital engagement strategies, supply-chain initiatives, and circular business models were grouped under marketing innovation for sustainability. Themes capturing trust, loyalty, satisfaction, advocacy, co-creation, and participation in brand-related communities were organised within the eco-brand engagement domain.

Table 2. Coding framework and thematic structure used in the synthesis

Domain / main construct	Descriptive themes	Example codes / indicators used in coding	Example sources*
Consumer environmental orientation	Environmental values and beliefs	“environment is a core personal value”; “biospheric value orientation”; “belief that individual actions matter for the environment”	(Ahmad et al., 2020; Chkanikova & Lehner, 2015; Palomino et al., 2019)
	Environmental awareness and knowledge	“knowledge about environmental problems”; “understanding of eco-labels”; “awareness of product life-cycle impact”; “ability to identify green products”	(Abate et al., 2025; Hua et al., 2025; Moisello & Pellicelli, 2025)
	Environmental attitude and concern	“positive attitude toward green products”; “concern about climate change”; “worry about pollution and waste”; “favorable evaluation of eco-friendly brands”	(Chkanikova & Lehner, 2015; D. Li, 2025; Palomino et al., 2019)
	Perceived responsibility and moral norms	“feeling personally responsible for environmental protection”; “moral obligation to choose green products”; “guilt when buying non-green alternatives”	(Ahmad et al., 2020; Hua et al., 2025; Moisello & Pellicelli, 2025)
	Perceived behavioral control / self-efficacy	“perceived ease of accessing green products”; “ability to pay price premium”; “confidence in changing daily habits”; “control over household purchasing”	(Foziljonov et al., 2025; Senyapar et al., 2024; Shajrawi et al., 2025)
	Social / peer influence and norms	“friends encourage green buying”; “family norms about recycling”; “social pressure to appear environmentally responsible”; “influence of online communities”	(Shahid et al., 2024; Singh et al., 2024; Xiao et al., 2023)
Marketing innovation for sustainability	Green product innovation	“use of recycled or biodegradable materials”; “energy-efficient product design”; “eco-features as core value proposition”; “development of new green product lines”	(S. Li et al., 2022; Pranta et al., 2025; Purcărea et al., 2022)
	Green process and supply-chain innovation	“cleaner production processes”; “green logistics and distribution”; “sustainable sourcing and supplier selection”; “waste reduction in operations”	(Forliano et al., 2025; Kim & Lee, 2023; Kobets et al., 2024)
	Sustainability communication and green advertising	“green claims in advertising”; “environmental messages in campaigns”; “use of eco-labels and certifications”; “storytelling about environmental initiatives”	(Kobets et al., 2024; Moschko et al., 2023; Purcărea et al., 2022)

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Domain / main construct	Descriptive themes	Example codes / indicators used in coding	Example sources*
Eco-brand engagement	Digital engagement and social media-based innovation	“interactive sustainability content on social media”; “hashtags and challenges related to environmental campaigns”; “online communities for eco-conscious consumers”	(Ahmed et al., 2024; De Ruyter et al., 2022; Forliano et al., 2025)
	Eco-branding and sustainable brand positioning	“positioning the brand as environmentally responsible”; “integration of sustainability into brand identity”; “use of green symbols and colors in visual identity”	(Arya et al., 2022; Kumar, 2022; Purcărea et al., 2022)
	Circular and sustainable business-model innovation	“refill and reuse systems”; “product-as-a-service models”; “take-back and recycling programs”; “sharing and rental platforms for eco-products”	(Daou et al., 2025a; Garg et al., 2025; Zaman & Kusi-Sarpong, 2024)
	Cognitive engagement	“active processing of sustainability information”; “search for detailed environmental claims”; “attention to eco-labels and certifications”; “information seeking on brand’s green performance”	Hollebeek et al. (consumer engagement); Xiao et al. (2023)
	Emotional engagement	“feeling proud to support eco-brands”; “emotional attachment to environmentally responsible brands”; “brand love based on shared environmental values”; “outrage when brands greenwash”	(Ndhlovu & Maree, 2022; Trzeciak et al., 2022; Xiao et al., 2023)
	Behavioral engagement (advocacy & participation)	“recommending eco-brands to others”; “positive word-of-mouth about green products”; “joining brand-led environmental campaigns”; “sharing or commenting on sustainability posts”	(S. Li et al., 2022; Ndhlovu & Maree, 2022; Purcărea et al., 2022)
	Co-creation and community participation	“co-designing green solutions with brands”; “participation in online eco-communities”; “providing feedback on sustainability initiatives”; “crowdsourcing ideas for greener products”	(Ahmed et al., 2024; Forliano et al., 2025; Khalid et al., 2024)
	Relational outcomes: trust, loyalty, long-term relationship	“trust in brand’s environmental claims”; “intention to repurchase eco-brands”; “loyalty despite higher prices”; “resilience of relationship during crises or criticism”	(Ahmed et al., 2024; De Ruyter et al., 2022)

Source: data proceed

A further stage of analysis focused on developing analytical themes that explained relationships among these domains. This step involved comparing themes across studies and contexts to identify recurrent patterns, such as the role of consumer environmental orientation as a driver of marketing innovation, the mediating function of innovation in shaping eco-brand engagement, and the feedback effects of engagement on subsequent managerial decisions.

RESULT AND DISCUSSION

Characteristics of the Included Studies

The qualitative synthesis is based on 38 peer-reviewed journal articles that examine different facets of green consumer behavior, sustainability-oriented marketing innovation, and eco-brand engagement. These studies span a variety of geographic contexts (including Asian, European, and global settings), industry sectors (such as FMCG, retail, and services), and research designs (survey-based quantitative studies, qualitative investigations, mixed-methods research, and conceptual/theoretical papers). Despite this heterogeneity, all included studies contribute to understanding how environmentally oriented consumers respond to green products and brands, how firms design and implement sustainability-related marketing practices, and how these practices translate into engagement, trust, and loyalty. Table 3 summarises the main characteristics and contributions of the reviewed studies and provides the empirical and conceptual foundation for the thematic analysis presented in the subsequent subsections.

Table 3. Summary of the Studies Included in the Qualitative Synthesis

No	Example Author(s)	Count / Context	Method / Design	Main Focus	Key Constructs	Key Findings (short)	Relevance to this review
1	(De Ruyter et al., 2022; Duan & Qutayan, 2024)	South Korea	Survey, quantitative	Environmental consciousness and eco-friendly product purchase	Environmental consciousness, purchase intention, actual purchase	Higher environmental consciousness significantly increases intention and actual purchase of green products	Shows how consumer environmental orientation translates into green purchase behavior
2	(Ahmed et al., 2024; Arya et al., 2022)	Indonesia	Survey, quantitative	Eco-sustainable product purchasing	Environmental knowledge, environmental attitude, recycling	Knowledge, attitude, and recycling behavior jointly predict eco-	Informs the multidimensional structure of consumer environment

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No	Example Author(s)	Country / Content	Method / Design	Main Focus	Key Constructs	Key Findings (short)	Relevance to this review
					behavior, political action	sustainable purchasing	al orientation
3	(Forliano et al., 2025; Kobets et al., 2024)	Multiple countries	Systematic review	Social and psychological drivers of green consumer behavior	Environmental awareness, attitude, norms, social influence	Identifies key psychological and social factors driving green consumer behavior	Provides a broad overview of drivers underlying environmental orientation and green behavior
4	Zaman & Kusi-Sarpong (2024)	Various (cross-country)	Survey and conceptual integration	Green consumer behavior and environmental responsibility	Environmental attitude, concern, perceived responsibility, peer influence	Environmental concern and responsibility, reinforced by peer influence, foster green behavioral patterns	Clarifies how internal and social factors jointly shape green consumer behavior
5	(Das et al., 2024; Rusyani et al., 2021; Trzeciak et al., 2022)	Online / digital context	Survey, structural equation modelling	Social media communication and eco-brand engagement	Green advertising, social media interaction, brand engagement, trust	Interactive green communication strengthens trust and eco-brand engagement	Connects digital communication strategies to eco-brand engagement outcomes
6	(Kumar, 2022; Moschko et al., 2023; Purcărea et al., 2022)	Competitive brand markets	Conceptual and empirical illustration	Green marketing competition and brand differentiation	Green positioning, eco-branding, perceived authenticity	Overuse of similar green symbols reduces differentiation and may weaken	Highlights the challenge of eco-brand positioning under saturated green communication

No	Example Author(s)	Country / Context	Method / Design	Main Focus	Key Constructs	Key Findings (short)	Relevance to this review
7	(S. Li et al., 2022; Salnikova et al., 2022; Singh et al., 2024)	Multinational brands	Survey, cross-sectional	Risk of misalignment between sustainability claims and practices	Perceived consistency, perceived risk, skepticism, brand image	Inconsistency between claims and practices increases skepticism and harms brand image	Underlines the importance of alignment between narratives and operational realities for engagement
8	(De Ruyter et al., 2022; Kumar, 2022; S. Li et al., 2022)	Conceptual / cross-context	Conceptual, qualitative synthesis	Systematic framework for eco-brand engagement	Consumer orientation, marketing innovation, eco-brand engagement	Proposes an integrative framework linking consumer orientation, innovation, and eco-brand engagement	Provides a conceptual backbone and informs the framework proposed in the present study

Source: data proceed

The distribution of studies summarised in Table 1 shows that most prior work concentrates on explaining green purchase intention and behavior through psychological and social factors, with a growing but still limited subset explicitly examining marketing innovation and eco-brand engagement. Research is dominated by survey-based designs in specific national contexts, complemented by a smaller number of qualitative and conceptual contributions that explore mechanisms more deeply. This configuration underlines the need for an integrative synthesis that connects consumer environmental orientation, sustainability-oriented marketing innovation, and eco-brand engagement within a single coherent framework—an agenda that guides the thematic analysis and model development in the following subsections.

Dynamics of Consumer–Environment Alignment within Brand Interaction Systems

The thematic synthesis indicates that the relationship between sustainability-oriented marketing and eco-brand engagement is better understood as part of a broader configuration than as a simple market-response sequence. Across the reviewed studies, recurring patterns point to four interrelated domains. Consumer environmental orientation appears as the behavioural basis that

shapes how sustainability-related initiatives are received. Sustainability-oriented marketing innovation captures the organisational efforts through which environmental commitments are translated into products, processes, communication, and business models. Sustainability accounting mechanisms add a further dimension by supporting the credibility of those initiatives through measurement, reporting, control, and assurance. Eco-brand engagement emerges not only as an outcome of these interactions, but also as a relational process reflected in trust, loyalty, advocacy, participation, and co-creation. Read together, these findings provide the basis for the framework proposed in this study.

Stability in consumer attitudes toward environmental messages issued by brands follows a trajectory that is not always linear. Certain consumer segments display relatively steady attitudes when they encounter brands that match their existing views, whereas others show fluctuating responses when confronted with conflicting messages or experiences that diverge from initial expectations (Salnikova et al., 2022). This tension helps form a new evaluative landscape in which consumers screen information more cautiously. The intensity of emotional engagement tends to grow as interactions are repeated, particularly when consumers detect continuity in the narrative and a clear direction in brand communication. Relationships gradually move beyond purely transactional exchanges and acquire symbolic meaning that reflects the consumer's self-identity and social stance.

Consumer experience occupies a central position in the formation of loyalty rooted in environmental perceptions, functioning as the point where brand promises meet perceived reality. Each interaction—from initial exposure to sustainability claims through to product use—adds a new layer to the consumer's overall perception and cumulatively shapes long-term judgments. Consistent and relevant experiences foster loyalty that is more resistant to external disruptions, including competitive pressure and changing market trends. Discrepancies between claims and actual experience, on the other hand, rapidly activate more critical evaluative mechanisms, so that loyalty built over time can erode within a relatively short period. This process shows that loyalty depends not only on the intensity of communication but also on the quality of experiences that become embedded in the consumer's memory.

The mismatch between consumer expectations and the reality of brand communication represents one of the most sensitive elements in this intricate interaction system. Expectations often arise from idealized narratives shaped through strategic messaging, whereas the reality of communication is revealed in day-to-day operational practices that do not always correspond fully to those narratives (Arya et al., 2022). Such inconsistencies influence immediate perceptions while simultaneously exerting long-term effects in the form of declining trust. Once consumers perceive a gap between promises and actual experiences, they tend to create emotional distance as a protective response against potential manipulation. The cumulative outcome is a weakening of previously established engagement and a heightened level of resistance toward subsequent sustainability messages.

Brand–consumer interaction, viewed more broadly, forms a dynamic network of mutually influential relationships. Shifts in consumer preference patterns arise not only from brand communications but also from social experiences, peer influences, and the narratives that circulate in digital public spaces. This complexity generates the need for a more structured perspective on

how alignment between consumers' environmental orientations and brand communication strategies can be sustained over the long term. Interaction systems that are not managed in an adaptive manner carry a higher risk of fragmentation, leaving brands vulnerable to losing the symbolic relevance that once underpinned their engagement with consumers.

Structural Innovation Patterns in Marketing Management Processes

The transformation of decision-making structures within marketing organizations is increasingly showing a significant shift from traditional hierarchical patterns to more flexible and adaptive configurations. This change did not occur spontaneously, but rather was shaped by external pressures in the form of accelerating market dynamics, growing public awareness of sustainability issues, and growing demands for transparency. In this context, decision-making is no longer centered solely at the top management level but is beginning to spread across various work units with direct contact with consumers and the operational environment. This process has resulted in a more collaborative coordination pattern, while also requiring internal control mechanisms capable of maintaining consistent strategic direction and preventing fragmentation due to differing interests between units.

The integration of internal policies and external communication strategies is a crucial aspect determining the success of structural innovation in marketing management. Policies formulated internally cannot be separated from how they are translated into public narratives delivered through various communication channels (Forliano et al., 2025; Khalid et al., 2024). When there is a lack of synchronization, the public quickly perceives a gap between the image being constructed and the operational reality being implemented. Therefore, organizations are required to establish internal mechanisms that enable continuous alignment, including through cross-divisional forums, regular evaluation procedures, and the use of strategic data as a basis for developing credible and consistent external messaging.

The adaptation of managerial systems to changing market demands is increasingly dynamic and complex. Previously stable management systems must now operate in conditions of high uncertainty, where trends can change quickly, and consumer preferences can shift rapidly. In these conditions, procedural flexibility becomes a crucial factor, as organizations are required not only to react but also to anticipate change by developing structures capable of processing information quickly and accurately. This adaptation process often involves reorganizing workflows, adjusting performance indicators, and strengthening analytical capacity so that decisions can reflect the realities of a constantly evolving market.

Cross-functional coordination in designing consistent environmental messaging presents organizations with both structural and cultural challenges. Marketing, production, procurement, and public relations divisions must work in concert to ensure that the message is not only communicatively compelling but also aligned with operational practices (Kim & Lee, 2023; Kobets et al., 2024). When coordination is fragmented, the potential for message distortion is significant, which can ultimately fuel public skepticism. Effective coordination requires an open internal communication structure, standardized information exchange mechanisms, and an organizational

culture that encourages transparency between units as part of a long-term reputation-building strategy.

Reputational risk management in a highly competitive environment has become an integral dimension of structural innovation in marketing management. Reputation is no longer viewed as a passive asset, but rather as a dynamic entity that can be affected by various external factors, including public opinion, media coverage, and competitor activity. Organizations are required to establish early detection systems capable of identifying potential crises at an early stage and developing coordinated response protocols. These efforts aim not only to minimize negative impacts but also to maintain the continuity of relationships with consumers that have been built through a long and complex process.

Systematic Integration Mechanisms between Consumer Behavior and Marketing Innovation

Mechanisms that systematically integrate consumer behavior with marketing innovation now reveal a highly complex and reciprocal pattern of interaction in which market responses are treated not as passive outcomes but as strategic inputs that strongly influence the direction of managerial policies. Synchronization between the ways consumers respond and the forms of managerial innovation develops through an iterative process rather than a one-way sequence and depends on the organization's capacity to interpret market signals with precision. Changes in consumer preferences operate as triggers for internal restructuring, while innovations introduced at the managerial level subsequently shape how consumers build expectations and judge brands. The resulting configuration resembles an interdependent system in which weak sensitivity to this rhythm of synchronization can produce strategic disturbances that directly undermine marketing effectiveness.

Feedback loops generated within this process function as continuous reinforcement mechanisms in the relationship between brands and consumers. Each interaction, whether it involves purchase experiences, exposure to communication content, or participation in digital environments, produces symbolic data that implicitly becomes a basis for organizational evaluation (Purcărea et al., 2022; Salnikova et al., 2022). Structured management of this feedback enables organizations to translate those insights into further refinement of communication policies and strategic directions. Organizations that allow this flow of information to be interrupted or distorted face the risk of losing momentum in tracking shifts in consumer attitudes, and the distance between internal strategies and external realities gradually widens.

Two dimensions, stability and flexibility, are central to managing increasingly rapid and unpredictable shifts in consumer preferences. Stability preserves consistency in strategic direction and brand identity, whereas flexibility provides the capacity to adjust to evolving market conditions. Achieving a balance between these dimensions calls for system designs that safeguard core principles without locking the organization into rigid structures that suppress innovation. Organizations that manage this balance effectively tend to maintain internal cohesion while simultaneously enhancing responsiveness to environmental changes, so innovation emerges in a proactive and long-term oriented manner rather than as a series of short-term reactions.

Strengthening trust through structural consistency represents one of the most important consequences of systematically integrating consumer behavior with marketing innovation. Trust does not arise simply from frequent communication, but from a repeatedly perceived alignment between articulated messages and observable actions. Consistent structures provide the foundation that allows an organization to maintain this alignment over long periods, because coordinated and stable internal arrangements reduce the likelihood of message distortion. Consumer trust in this view reflects not just the output of a communication program but the accumulated effect of systemic integrity that permeates organizational operations.

The integration process also faces fragmentation pressures that stem from system complexity and diverse internal interests. Fragmentation typically appears when organizational units work in isolation from one another, which obstructs the harmonization that should function as a key strength of an integrated system. Harmonization becomes possible once effective coordination mechanisms are in place and when organizational culture supports transparency in the circulation of information. Fragmentation in such settings is therefore both a structural and a cultural issue, linked to patterns of power relations and the distribution of authority within the organization. Efforts to reduce fragmentation require not only technical interventions but also initiatives that cultivate shared values and norms for ongoing collaboration. The reviewed literature consistently links consumer environmental orientation and sustainability-oriented marketing practices to eco-brand-related outcomes, while a smaller but significant body of work points to the role of accounting and disclosure mechanisms in supporting the credibility of those relationships.

Sustainability Accounting as an Enabling and Legitimizing Mechanism

The thematic synthesis indicates that sustainability-oriented marketing innovation becomes more credible and impactful when supported by structured sustainability accounting systems. Across the reviewed studies, recurring themes of transparency, measurable environmental performance, disclosure credibility, and consistency between claims and practices suggest that eco-brand engagement is strengthened when sustainability initiatives are supported by formal measurement and reporting mechanisms. Although many studies focus primarily on marketing strategies, a significant portion implicitly highlights the importance of quantifiable sustainability performance, ESG indicators, and verified environmental claims in shaping consumer trust (Snyder, 2019).

The findings suggest that sustainability accounting can be interpreted as a mediating mechanism between marketing innovation and eco-brand engagement. Environmental measurement tools such as carbon metrics, sustainability KPIs, and performance monitoring systems provide internal control structures that align sustainability narratives with operational realities. When firms disclose structured sustainability information through ESG reporting, integrated reporting, or third-party assurance consumers perceive greater authenticity and reduced greenwashing risk. This perceived disclosure credibility enhances trust, loyalty, and advocacy behaviors, reinforcing eco-brand engagement (Page et al., 2021).

Sustainability accounting contributes to strategic control and long-term alignment. The reviewed literature indicates that consistent environmental performance and transparent disclosure practices reduce skepticism and stabilize brand relationships over time. From a governance perspective,

sustainability accounting strengthens accountability and reduces information asymmetry between firms and stakeholders. This alignment supports the argument that eco-brand engagement is not solely a function of consumer values or marketing creativity, but also of credible sustainability governance embedded within accounting systems.

The reviewed literature suggests that sustainability accounting can be understood as an important governance and credibility-supporting dimension within the broader process linking sustainability-oriented marketing innovation and eco-brand engagement. Rather than functioning as a formally tested mediator, sustainability accounting appears to provide the measurement, control, reporting, and assurance structures through which sustainability claims become more transparent, verifiable, and institutionally credible. In this sense, mechanisms such as environmental management accounting, sustainability performance indicators, ESG reporting, integrated reporting, and assurance may help align market-facing sustainability narratives with organisational practices and disclosed performance. This alignment is relevant because trust, loyalty, advocacy, and related forms of eco-brand engagement are unlikely to be sustained by communication cues alone when stakeholders increasingly evaluate firms through the credibility of their disclosed sustainability information (Thomas & Harden, 2008).

The weight of evidence was not distributed evenly across the four themes. The strongest concentration of studies addressed consumer environmental orientation and sustainability-oriented marketing innovation, particularly in relation to values, attitudes, social influence, green communication, product innovation, and eco-brand positioning. Eco-brand engagement was also widely represented, although often under different conceptual labels and with varying emphasis on cognitive, emotional, and behavioural dimensions. Sustainability accounting mechanisms appeared in a smaller subset of the reviewed literature, but this theme remained analytically important because it connected sustainability claims to measurement, disclosure, transparency, and assurance, and this uneven distribution helps explain why the proposed framework gives particular attention to sustainability accounting as a less developed but conceptually significant dimension.

The framework developed in this study emerged from the thematic synthesis rather than from a pre-set conceptual structure. The analysis first identified recurring descriptive themes across the reviewed studies, including consumer environmental values and beliefs, sustainability-oriented marketing practices, sustainability measurement and disclosure, and engagement-related outcomes such as trust, loyalty, advocacy, and co-creation. These themes were then interpreted at a higher level to clarify how the literature connects them. From this process, four analytical domains became visible: consumer environmental orientation as the behavioural foundation, sustainability-oriented marketing innovation as the organisational response, sustainability accounting mechanisms as the credibility-supporting governance layer, and eco-brand engagement as the relational outcome. The framework therefore reflects an inductive progression from recurring patterns in the literature to conceptual integration, with each domain grounded in themes consistently identified across the reviewed studies.

Framework Research

Developing a framework to strengthen consumer engagement with environmentally oriented brands calls for a structured, multi-layered approach, because the process involves more than

designing technical procedures; it also entails reshaping how the organization understands its long-term relationship with consumers and the brand. Work on a systematic framework starts from the need to build a workflow that can integrate various strategic components into a coherent operational architecture. The stages evolve gradually, beginning with mapping internal organizational conditions, reinforcing alignment across units, and designing information flows that enable every process to move toward a shared overarching objective. A clearly defined sequence of stages reduces ambiguity during implementation and at the same time supports more objective assessment of outcomes.

The thematic synthesis indicates that the relationship between sustainability-oriented marketing and eco-brand engagement is better understood as part of a broader configuration than as a simple market-response sequence. Across the reviewed studies, recurring patterns point to four interrelated domains, and consumer environmental orientation appears as the behavioural basis that shapes how sustainability-related initiatives are received. Sustainability-oriented marketing innovation captures the organisational efforts through which environmental commitments are translated into products, processes, communication, and business models. Sustainability accounting mechanisms add a further dimension by supporting the credibility of those initiatives through measurement, reporting, control, and assurance. Eco-brand engagement emerges not only as an outcome of these interactions, but also as a relational process reflected in trust, loyalty, advocacy, participation, and co-creation. Read together, these findings provide the basis for the framework proposed in this study.

Evaluation activities require the presence of system parameters that function as key instruments for gauging the quality and intensity of brand engagement. These parameters act both as measurement tools and as strategic guides that highlight which aspects need to be reinforced or corrected (Ndhlovu & Maree, 2022). The formulation of parameters follows a careful selection process that takes into account long-term relevance, sensitivity to change, and potential for integration across different organizational functions. Appropriately designed parameters enable the construction of a continuous monitoring system so that shifts in engagement levels can be detected early, before they develop into more serious risks.

Control and adjustment mechanisms occupy a strategic position in ensuring that the framework remains effective over time, frameworks that remain static tend to lose relevance quickly in markets characterized by constant change. Control systems therefore need to be arranged so they can promptly identify deviations and support timely, well-calibrated corrective actions. Adjustment processes take place not only in response to emerging problems but also in a proactive manner through scenario simulations and routine evaluations that help the organization anticipate future developments. In this way, effectiveness is preserved and even enhanced through ongoing organizational learning.

Replication and scalability constitute additional critical dimensions in framework development, particularly for organizations that operate in multiple markets with diverse characteristics. A robust framework must offer structural flexibility that allows broad application while preserving its essential principles. Replication depends on the standardization of core elements, whereas scalability requires adaptive capacity that remains sensitive to local contexts. The tension between

standardization and adaptation becomes a strategic space that ultimately determines whether the framework can succeed across different regional and global operating environments.

Long-term system sustainability forms the underlying foundation for all efforts to build enduring engagement with environmentally oriented brands. Sustainability here refers not only to the continuity of operations but also to the system's ability to evolve over time without losing its strategic direction. A framework with a long-term orientation demands continuous investment in organizational capabilities, the strengthening of internal culture, and the maintenance of consistent relationships with consumers, and through such an approach, engagement is not episodic but becomes embedded in the organization's everyday practices (Ketprapakorn & Kantabutra, 2022). Each domain in the framework is therefore anchored in patterns that recurred across the reviewed studies, rather than being introduced as a purely a priori conceptual category.

CONCLUSION

This review shows most consistently that eco-brand engagement is not explained by sustainability-oriented marketing efforts alone. Across the reviewed literature, the strongest pattern lies in the interaction between consumer environmental orientation, marketing innovation, and the credibility of sustainability-related information. Consumer values, beliefs, attitudes, and social influence remain central in shaping receptiveness to environmentally oriented brands, while sustainability-oriented marketing innovation gives these commitments visible form through products, processes, communication, and business models. The review also indicates that sustainability accounting occupies an important, though still less extensively developed, place in this relationship by strengthening the credibility of sustainability claims through measurement, reporting, and assurance practices. Taken together, these findings support the view that eco-brand engagement is better understood not only as a market-facing outcome, but also as one that is conditioned by governance, transparency, and accountability.

The practical implications of this review are equally clear. Firms seeking to build more credible and durable eco-brand engagement should move beyond symbolic sustainability communication and invest in systems that make environmental claims more measurable and verifiable. This includes the use of environmental management accounting, clearly defined sustainability and ESG key performance indicators, and reporting processes supported by assurance or comparable verification mechanisms. Such practices can help organisations reduce information asymmetry, mitigate perceptions of greenwashing, and strengthen the conditions under which trust, loyalty, advocacy, and participation may develop. For managers, the value of an integrated framework lies in its ability to connect consumer expectations, innovation priorities, and accountability mechanisms within a more coherent strategic approach.

The conclusions of this review should be interpreted in light of several limitations. The study drew on articles indexed in three major databases and included only English-language journal publications, which may have excluded relevant work published in other languages, regional outlets, books, or conference proceedings. The review was also designed as a qualitative thematic synthesis and did not apply a formal quality appraisal or risk-of-bias instrument, which limits the extent to which methodological differences across studies can be systematically assessed. In

addition, the possibility of publication bias cannot be ruled out, particularly in a field where positive or conceptually coherent findings may be more likely to appear in indexed journals. These limitations suggest that future research would benefit from broader database coverage, inclusion of non-English studies, and more explicit quality assessment procedures, while also testing the framework across different industries, national regulatory settings, and digital platform environments.

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