

The Rise of Brand Love and E-Vocacy in Electric Vehicle Marketing – A Systematic Review

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Abstract

As the electric vehicle (EV) sector shifts from a niche to a mass market, traditional cognitive-based marketing models are inadequate for explaining deep consumer loyalty. This Systematic Literature Review (SLR) synthesizes the evolution of green marketing stimuli and their impact on consumer advocacy. Adhering to PRISMA guidelines, we analysed 33 high-impact empirical studies (2020–2025) to construct an enhanced Stimulus-Organism-Response (S-O-R) framework integrated with Signalling Theory. The results reveal three critical paradigm shifts. First, generic "Green Marketing" has evolved into specific, high-efficacy signals: Green Innovation (competence), Green Transparency (integrity), and Eco-Prestige (status). Second, the analysis identifies a "Satisfaction Trap," demonstrating that Green Brand Love—an intense emotional attachment—is a significantly stronger predictor of high-value behaviors than cognitive satisfaction. Third, consumer loyalty has shifted from passive repurchase intention to Active Evangelism and E-Vocacy (Electronic Advocacy). The study proposes an Integrated Green Signaling Model that positions Green Trust as a cognitive gateway to Green Brand Love, moderated by Tech-Anxiety. This framework advances prior S-O-R models by explicitly linking signalling efficacy to affective pathways, offering a robust theoretical roadmap for future research in developing markets characterised by infrastructural constraints.

Keywords: Electric Vehicles; Signaling Theory; S-O-R Framework; Green Brand Love; Brand Evangelism.

A. INTRODUCTION

The global transition toward sustainable mobility has positioned Electric Vehicles (EVs) at the forefront of environmental strategy and technological innovation. While earlier studies focused on selection strategies and infrastructure development as primary drivers of adoption (Gomes et al., 2024; Ren et al., 2021), the current market landscape has shifted significantly toward consumer-centric dynamics. Recent studies indicate that, in developing markets like Indonesia as well as in mature markets like Switzerland, the drivers of EV adoption are becoming increasingly complex, transcending mere functional utility or economic incentives (Adzhani et al., 2025; Brückmann et al., 2021). As the market matures, the challenge for automotive manufacturers is no longer "how to sell" an EV, but how to foster deep-seated loyalty and active advocacy among users in an increasingly competitive digital landscape (M. Li et al., 2025).

In this context, Green Marketing has emerged as a critical strategic tool. However, the literature suggests that generic environmental claims are no longer sufficient. Drawing from Signaling Theory, recent scholarship argues that consumers evaluate specific "green signals"—such as green innovation, transparency, and eco-prestige—to reduce information asymmetry and perceived risk (X. Li et al., 2025; Tang et al., 2025). Effective marketing communication serves as a vital stimulus that shapes consumer perceptions of value and trust ("5th International Conference on Intelligent Computing and Optimization, ICO 2022," 2023; Tsai et al., 2025). Conversely, inconsistent signals, such as greenwashing, have been found to significantly impede diffusion by eroding consumer confidence (S. Li et al., 2025). Thus,

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understanding the specific attributes of green brand approaches is essential for distinguishing successful EV brands from their competitors (X. Li et al., 2025; Tsai et al., 2025).

Despite the growing volume of research, a significant theoretical gap remains. The majority of existing studies rely heavily on traditional cognitive models, such as the Theory of Planned Behaviour (TPB) or standard satisfaction-loyalty frameworks (Su & Wan, 2024; Yeğin & Ikram, 2022). These studies typically focus on rational calculations—like perceived usefulness or cost savings—to predict Purchase Intention. However, a critical limitation persists: existing models largely overlook the affective pathways that link marketing signals to active advocacy. While valid for initial adoption, cognitive models fail to capture the intense emotional dimensions, such as passion and intimacy, that characterize high-involvement technology products.

Emerging evidence from 2024 and 2025 suggests a paradigm shift: for modern EV users, "Satisfaction" is merely a hygiene factor. It is "Green Brand Love"—an intense emotional attachment—that actually drives superior post-purchase behaviours (Chou & Chen, 2025). Furthermore, in the era of social media, the outcome of engagement has evolved beyond passive loyalty to "E-Vocacy" (Electronic Advocacy) and "Brand Defense" (M. Li et al., 2025). Current frameworks lack the theoretical depth to explain how users transform into active defenders of their chosen brands.

To bridge this gap, this Systematic Literature Review (SLR) integrates Signaling Theory within the S-O-R framework. Unlike previous reviews that focus on functional barriers, this study addresses the limitation of existing models by explicitly integrating both cognitive (Trust) and emotional (Love) mechanisms. We argue that established frameworks overlook the affective pathways linking signaling to advocacy. This review seeks to map how external marketing signals trigger internal affection, leading to evangelistic behaviours. By analysing current empirical evidence—including moderators such as resale anxiety [4]—this study addresses the following Research Questions (RQs): **RQ1:** What specific green marketing stimuli are identified in the current literature as effective "signals" (Signalling Theory) for triggering emotional connections among EV users? **RQ2:** How does the recent literature distinguish the impact of cognitive factors (e.g., satisfaction) versus affective factors (e.g., Green Brand Love) on consumer decision-making? **RQ3:** How are advanced post-purchase behaviours, specifically E-Vocacy (Electronic Advocacy) and Brand Evangelism, conceptualized and measured in the latest EV marketing studies (2024–2025)? **RQ4:** What conceptual models can be constructed by integrating Signaling Theory into the S-O-R framework to address existing theoretical gaps in the EV sector?

By answering these questions, this study provides a novel theoretical roadmap for future research and offers practical insights for marketers aiming to cultivate brand evangelism in the rapidly evolving electric vehicle sector.

B. LITERATURE REVIEW

Reconceptualising Green Marketing

The theoretical understanding of green marketing in the electric vehicle (EV) sector has undergone a significant paradigm shift. While earlier studies predominantly viewed green marketing through the lens of the traditional marketing mix (4Ps), contemporary literature increasingly interprets these activities through the lens of Signaling Theory (Spence et al., 1973). In the context of high-involvement products like EVs, where information asymmetry regarding long-term battery performance and environmental impact is high, green marketing functions not merely as promotion but as a critical mechanism for risk reduction.

Recent empirical evidence suggests that consumers differentiate between substantial "green signals"—such as verifiable green innovation and supply chain transparency—and superficial claims. For instance, (Tsai et al., 2025) demonstrates that brand-specific green attributes serve as distinct signals that allow consumers to navigate the complex EV marketplace. However, the efficacy of these signals depends on their

credibility; (S. Li et al., 2025) warns that greenwashing serves as a "negative signal" that erodes consumer confidence and impedes the diffusion of new energy vehicles. Consequently, the state of the art in EV marketing scholarship has moved beyond measuring the presence of green claims to evaluating the quality and honesty of green signaling as the primary antecedent of consumer trust (X. Li et al., 2025; Su & Wan, 2024).

The Affective Turn in the S-O-R Framework

The application of the Stimulus-Organism-Response (S-O-R) framework (Mehrabian & Russell, 1974) to sustainable consumption has traditionally been dominated by cognitive-centric models. The existing literature typically posits that environmental stimuli elicit cognitive states such as Green Perceived Value and Green Trust, which subsequently drive purchase intentions (Su & Wan, 2024; Yeğin & Ikram, 2022). While this cognitive path is well-established, it fails to capture the intense fervour observed in modern EV communities fully.

A critical disjuncture in recent scholarship is the "Affective Turn," where researchers argue that cognitive satisfaction is a necessary but insufficient condition for deep loyalty. Groundbreaking studies by (Chou & Chen, 2025; Song et al., 2025) challenge the status quo by introducing Green Brand Love—a passionate emotional attachment—as a superior mediator within the "Organism" component. To elucidate the theoretical advancement this study offers, Table 1 contrasts the proposed Affective-Signaling framework with prevalent models in the extant EV literature.

Table 1. Comparison of Theoretical Frameworks in EV Marketing Literature

Theoretical Model	Primary Focus	Key Mediators (Organism)	Typical Outcome (Response)	Limitation Addressed by the Current Study
Theory of Planned Behavior	Rational decision-making based on utility and social norms.	Attitude; Subjective Norms; Perceived Behavioral Control.	Purchase Intention.	Neglects the role of emotional attachment and brand-specific signaling; focuses on pre-adoption.
Value-Belief-Norm	Moral obligation and environmental altruism.	Awareness of Consequences; Personal Norms.	Pro-environmental Behavior.	Focuses on altruism rather than the commercial brand-consumer relationship.
Traditional Cognitive S-O-R	Processing of external stimuli into cognitive perceptions.	Green Satisfaction; Green Trust; Perceived Quality.	Repurchase Intention; Loyalty.	Fails to explain "Active Defense" behavior; ignores the "Satisfaction Trap" where satisfied users don't advocate.
Proposed Integrated Signaling Model	Dual-pathway processing (Cognitive & Affective).	Green Trust (Gateway → Green Brand Love).	Active Evangelism; E-Vocacy.	Integrates specific signaling types (Innovation, Transparency, Prestige) and affective mediators to predict active advocacy.

Source: Research data, 2025

As illustrated in Table 1, the proposed evolution suggests that green, innovative products stimulate not just rational calculations of benefits but also an emotional resonance that binds the consumer to the brand. This theoretical pivot from satisfaction to love represents a significant advancement in understanding the psychological mechanics of the contemporary EV consumer.

The Emergence of E-Vocacy and Brand Evangelism

The definition of "consumer loyalty" in the EV sector requires urgent revision in light of the digital transformation. Traditional models often limit the "Response" variable to Repurchase Intention or Willingness to Pay (Yeğin & Ikram, 2022). However, in an era where social media dictates market trends, passive purchase intention is an inadequate metric of marketing success. The most recent stream of literature identifies a more active behavioral outcome: Brand Evangelism and E-Vocacy (Electronic Advocacy).

(M. Li et al., 2025) conceptualize "E-Vocacy" as a prosocial behavior in which users leverage social networks to promote sustainable mobility, driven by the social value generated. Similarly, (Chou & Chen, 2025) provides empirical evidence that emotionally connected consumers engage in "Brand Defense," actively protecting the brand from negative criticism. This shift indicates that the ultimate goal of green signaling is no longer just a transaction, but the recruitment of a volunteer army of advocates. This "Active Defense" perspective offers a more robust explanation for the resilience of certain EV brands despite technical setbacks or market volatility.

Contextual Barriers and Psychological Resistance

While the emerging theoretical consensus emphasises the roles of positive affect and advocacy, the widespread applicability of these models is inevitably moderated by pragmatic constraints. The transition to electric mobility is not frictionless; recent literature highlights a persistent dichotomy between consumers' "green aspirations" and their actual purchasing behaviour, which is often widened by specific anxieties. (Brückmann et al., 2021) identify "resale anxiety"—the fear of low residual value due to rapid battery degradation—as a critical cognitive barrier that can dampen the effect of positive brand signals. Similarly, (Tang et al., 2025) applies the social amplification of risk framework to demonstrate that perceived technological risks are often magnified through social discourse. Furthermore, comparative studies suggest that in markets with underdeveloped infrastructure (e.g., emerging economies), "Range Anxiety" can override emotional attachment (Adzhani et al., 2025). Consequently, a robust conceptual model must acknowledge that variables such as Tech-Anxiety serve as potent moderators. These factors condition the strength of the S-O-R relationship, suggesting that Green Brand Love can effectively drive Evangelism only when these foundational psychological barriers are mitigated by credible transparency.

C. METHODS

To ensure transparency, replicability, and scientific rigor, this study adopts a Systematic Literature Review (SLR) approach following the PRISMA 2020 guidelines (Page et al., 2021). The methodology was designed to capture high-quality empirical evidence that explicitly addresses the theoretical gap between Green Marketing signals and affective consumer responses in the electric vehicle (EV) sector. The review process consisted of three distinct phases: identification, screening, and eligibility assessment.

Data Source and Search Strategy

The Scopus database was selected as the primary source for data retrieval due to its extensive coverage of high-impact journals in business, management, and sustainability, as well as its rigorous quality indexing standards. To strictly align the search with the proposed research questions, a specialized Boolean search string was constructed. The search logic utilized the intersection of three key conceptual domains: (1) The Object (electric and new energy vehicles); (2) The Theoretical Constructs (Signaling Theory, Green Signals, Brand Love, Evangelism); and (3) The Context (marketing and consumer behavior).

The specific search string employed was: *TITLE-ABS-KEY (("electric vehicle*" OR "electric car*" OR "EV" OR "new energy vehicle*") AND ("signaling theory" OR "signal*" OR "green signal*" OR "brand love" OR "brand evangelism" OR "advocacy" OR "word of mouth" OR "green trust") AND ("marketing" OR "branding" OR "consumer"))*. The final search was conducted on January 10, 2026. As detailed in Table 2, this targeted search strategy initially yielded 265 documents, indicating that while the intersection of EV technology and marketing is growing, the specific focus on "signaling" and "affective love" remains a specialized niche.

Inclusion and Exclusion Criteria

To ensure the relevance and currency of the reviewed literature, a set of inclusion and exclusion criteria was applied (see Table 2). A temporal filter restricted the results to the period of 2020–2025. This critical

limitation was imposed to ensure the findings reflect the current technological maturity of the EV market and modern consumer sentiments; studies before 2020 often addressed "early adopter" behaviors that are no longer representative of today's mass-market dynamics.

Furthermore, to guarantee the scientific quality of the synthesis, the review was limited to peer-reviewed journal articles published in the final stage. Conference papers, book chapters, and "articles in press" were excluded to avoid preliminary or unvalidated findings. The language was restricted to English to ensure interpretative consistency. As a result of these automated filters, the dataset was reduced from 265 to 106 documents.

Table 2. Selection Criteria and Search Parameters

Criterion	Inclusion Criteria	Exclusion Criteria
Timeline	Publications between 2020 and 2025 to capture current market dynamics.	Studies published before 2020 (obsolete market conditions).
Document Type	Peer-reviewed Journal Articles in the Final publication stage.	Conference proceedings, book chapters, editorials, and "Articles in Press".
Language	English, to ensure interpretative consistency.	Documents published in languages other than English.
Subject Area	Focus on Marketing, Consumer Behavior, or Branding in the EV sector, using constructs such as Signaling or S-O-R.	Purely technical/engineering studies (e.g., battery chemistry) or Policy analyses without user-centric data.
Source Database	Scopus (indexed high-impact journals).	Grey literature, non-indexed journals, or trade publications.

Source: Research data, 2025

Screening and Quality Assessment

The final selection phase involved a qualitative manual screening of the remaining 106 documents. To ensure reliability, two authors independently screened the titles and abstracts, achieving a high inter-rater reliability (Cohen's kappa > 0.85). Disagreements were resolved through discussion. Full texts were examined to assess their alignment with the S-O-R framework and the specific constructs of interest. Additionally, the methodological quality of the potential studies was assessed using the CASP (Critical Appraisal Skills Programme) checklist adapted for quantitative analyses. Documents were excluded if they: (a) focused solely on technical engineering without behavioral metrics; (b) lacked empirical validation of the marketing constructs; or (c) failed to meet the quality threshold for research design validity. This rigorous filtering process resulted in a final sample of 33 high-relevance documents. While this number represents a significant reduction (approximately 12.5% of the initial pool), it indicates a highly concentrated body of literature. The selection flow is visually summarized in Figure 1 (PRISMA Flow Diagram).

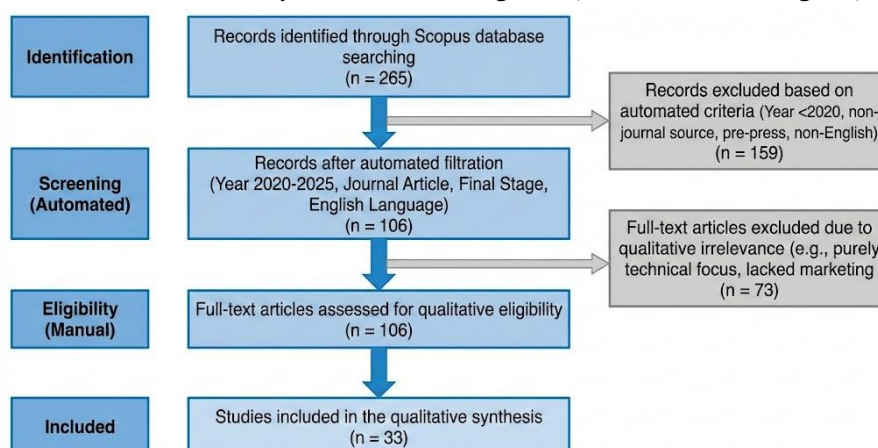


Figure 1. PRISMA Flow Diagram Detailing The Literature Search And Selection Process

Source: Research data, 2025

Critically, the final set of 33 articles represents the state of the art. The high rejection rate highlights a prevalent issue in the broader literature: many studies mention "marketing" but focus primarily on policy or infrastructure, failing to investigate the psychological mechanisms of signalling or brand love in depth. The selected 33 studies are unique in that they empirically test the psychological "black box" of the consumer.

Data Analysis

The final dataset was subjected to a thematic analysis. Data extraction focused on identifying the specific Stimuli (independent variables), Organism states (mediators), and Responses (dependent variables) used in each study. This structured extraction allowed for the synthesis of fragmented findings into a coherent theoretical narrative, identifying how the field has evolved from measuring simple satisfaction to exploring complex emotional advocacy.

D. RESULTS AND ANALYSIS

Descriptive Characteristics of the Literature

The systematic selection process resulted in a final corpus of 33 high-quality empirical studies. A descriptive analysis reveals critical trends regarding the temporal trajectory, geographical context, and methodological approaches of the current scholarship. As illustrated in Figure 2, the publication timeline exhibits a distinct exponential growth trajectory, with a significant "inflexion point" occurring in 2024. Approximately 70% of the selected studies were published in 2024–2025. This temporal skew reflects a fundamental maturity in the electric vehicle market; the academic conversation has moved beyond "adoption hurdles" and functional selection strategies, e.g., (Brückmann et al., 2021; Ren et al., 2021), to post-adoption dynamics such as "Brand Love" and "Advocacy" e.g., (Chou & Chen, 2025; M. Li et al., 2025).

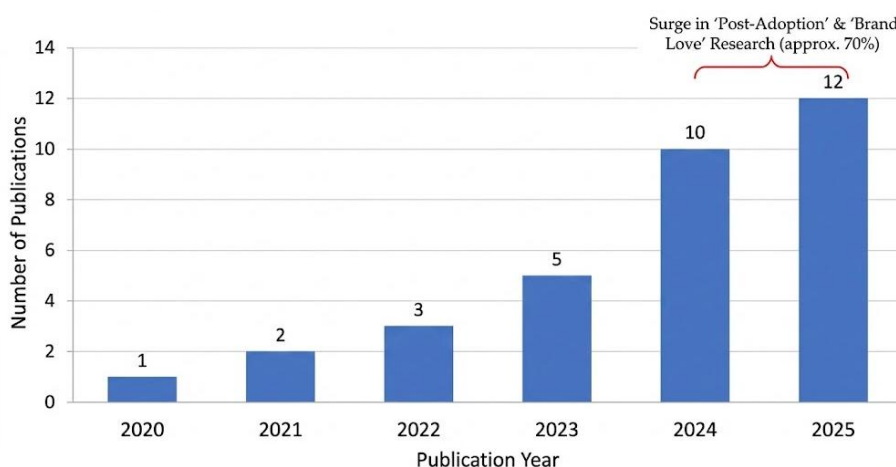


Figure 2. Temporal Distribution of Selected Studies

Source: Research data, 2025

Geographically, the literature exhibits a pronounced asymmetry (see Figure 3). The majority of empirical evidence originates from mature EV markets, particularly China and Taiwan. Studies such as those by [16] leverage the mature Chinese ecosystem to test advanced concepts, such as Green Brand Approaches and E-Vocacy, as consumers in these regions have already overcome initial adoption barriers.

Conversely, research in developing economies remains nascent. Although emerging studies by (Adzhani et al., 2025) have begun to map consumer preferences and adoption in Indonesia, there is a scarcity of research testing complex emotional models in these contexts. This geographical gap presents a critical opportunity: while theories of Brand Love are being established in mature markets (Tsai et al., 2025), their applicability in developing markets—where functional barriers such as infrastructure anxiety remain

high—remains under-theorized. This study aims to bridge this divide by adapting advanced frameworks to the emerging market context.

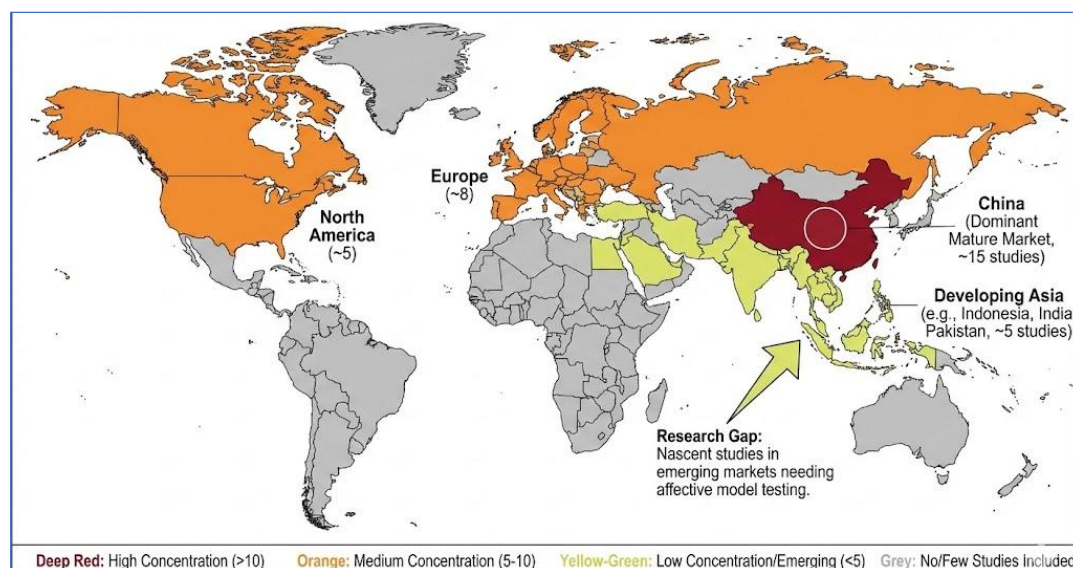


Figure 3. Geographical Distribution of Selected Studies

Source: Research data, 2025

As detailed in Table 3, quantitative methods dominate the field (85%), specifically Structural Equation Modeling (SEM). However, a critical limitation is the reliance on cross-sectional self-reported data. Very few studies use experimental designs to measure actual behavioural change, suggesting a need for future research to validate causal relationships between signalling and Evangelism.

Table 3. Summary of Methodological Approaches in Selected Studies

Methodology	Frequency	Representative Citations	Critical Insight
Quantitative (SEM-PLS/CB-SEM)	28 (85%)	(Adzhani et al., 2025; Chou & Chen, 2025; Song et al., 2025; Su & Wan, 2024)	The dominant standard for testing complex mediator models (e.g., Trust, Brand Love). Highly effective for predictive analysis in consumer behavior contexts.
Mixed Methods / Qualitative	3 (9%)	(M. Li et al., 2025)	Useful for exploring novel phenomena like "E-Vocacy" (e.g., analyzing social value on WeChat/Douyin) before quantifying them. Provides richer contextual insights.
Experimental / Survey Experiment	2 (6%)	(Brückmann et al., 2021; Tsai et al., 2025)	Rare but valuable for isolating the causal effects of specific signals (e.g., <i>Resale Anxiety</i> cues or <i>Green Attributes</i>) on consumer perception.

Source: Research data, 2025

Deconstructing Green Marketing (RQ1)

An analysis of the selected literature reveals a critical shift in how marketing stimuli are conceptualised in the Electric Vehicle (EV) sector. While earlier scholarship often operationalized "Green Marketing" as a monolithic construct, the current state of the art (2024–2025) overwhelmingly adopts a granular approach underpinned by Signaling Theory. In the context of EVs—a high-involvement product category characterized by significant information asymmetry about battery life and actual environmental impact—consumers do not merely process marketing messages; they actively decode specific "signals" to assess the manufacturer's credibility and quality.

As summarized in Table 4, the literature identifies three distinct categories of signaling stimuli that serve as the primary antecedents of consumer affection and advocacy: Green Innovation Signaling, Green Transparency, and Eco-Prestige.

Table 4. Typology of Green Marketing Signals in Recent EV Literature

Signal Category	Definition & Scope	Key Literature Support (Validated)	Theoretical Function (S-O-R Role)
Green Innovation Signaling	Strategic communication highlighting technological advancements and specific green attributes as tangible evidence of environmental commitment.	(X. Li et al., 2025; Song et al., 2025; Tsai et al., 2025)	Competence Signal: Reduces functional risk; specific attributes act as a primary <i>Stimulus</i> for perceived value and cognitive trust.
Green Transparency	The disclosure of verifiable environmental data to mitigate information asymmetry and counter the negative effects of greenwashing.	(S. Li et al., 2025; Su & Wan, 2024)	Trust Signal: Serves as a "hygiene factor" that prevents skepticism (risk reduction) and is essential for converting interest into genuine <i>Green Trust</i> .
Eco-Prestige (Social Image)	The symbolic value embedded in the brand allows users to project a "pro-environmental" identity and social status.	(M. Li et al., 2025; Song et al., 2025; Tsai et al., 2025)	Social Signal: Enhances self-identity and social capital (<i>Luxury/Status</i>); triggers affective <i>Brand Love</i> through social validation.

Source: Research data, 2025

First, Green Innovation has emerged as the most potent signal of competence. Research by (X. Li et al., 2025; Song et al., 2025) demonstrates that consumers perceive technological advancement not merely as a functional benefit but as a proxy for a brand's genuine commitment to sustainability. In the EV market, "green" is inextricably linked to "smart." (Tsai et al., 2025) further confirm that specific "perceived green attributes"—such as energy efficiency ratings—act as distinct signals that reduce perceived risk. Unlike traditional green products whose benefits are usually invisible, Green Innovation in EVs is tangible. Consequently, marketing communications that highlight specific technological attributes are significantly more effective in triggering value perception than generic slogans.

Second, the veracity of these signals is governed by Green Transparency. The literature presents a consensus that the efficacy of any green signal depends on the absence of "noise," specifically, greenwashing. (S. Li et al., 2025) provide compelling evidence that greenwashing creates a "boomerang effect" that severely damages consumer trust. Their findings indicate that environmental knowledge moderates this relationship; as consumers become more educated, the demand for transparency increases. Furthermore, (Su & Wan, 2024) identifies "Green Perceived Risk" as a major barrier. Thus, transparency acts as a hygiene factor; its presence minimises risk, while its absence (perceived deception) immediately undermines the cognitive trust required for loyalty.

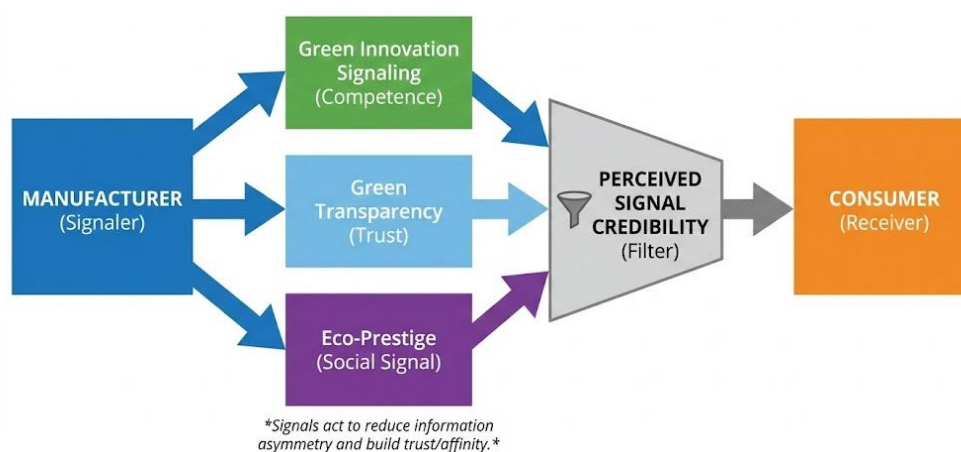


Figure 4. Conceptual Diagram of the Green Signaling Mechanism

Source: Research data, 2025

Finally, Eco-Prestige serves as a vital social signal. Consumers utilize the "Green Brand Image" to signal their own values and status to their social circles. This aligns with the "conspicuous conservation"

hypothesis supported by (M. Li et al., 2025), in which the utility of the EV derives not only from transportation but also from the social capital generated by driving a recognised sustainable brand. This "Signaling-to-Others" dimension complements the "Signaling-to-Self" (trust/value) dimension, creating a dual-layered psychological mechanism (refer to Figure 4).

In synthesis, the answer to RQ1 is that the "Green Marketing" construct has dissolved into a multidimensional signaling system. The literature indicates that effective stimuli are no longer about promising a green future, but about signaling current technological competence, honest transparency, and social value. This deconstruction is pivotal to the proposed model in this study, as it implies that measuring "Green Marketing" in general is methodologically flawed; future research must measure the distinct effects of Innovation, Transparency, and Prestige to predict consumer advocacy accurately.

The Organism's Internal Process (RQ2)

Within the S-O-R framework, the "Organism" represents the internal processing of external stimuli. A critical synthesis of the reviewed literature exposes a fundamental dichotomy in how this internal state is conceptualized. As detailed in Table 5, the scholarship is currently divided between traditional models that prioritise cognitive evaluations (e.g., satisfaction, trust) and emerging models that emphasise affective connections (e.g., brand love, passion).

Table 5. Cognitive vs. Affective Mediators in EV Research

Theoretical Perspective	Key Constructs (The "Organism")	Underlying Logic	Behavioral Outcome Prediction	Representative Studies (Validated)
Traditional Cognitive View	Green Trust; Green Satisfaction; Green Perceived Value	Utilitarian/Rational: "The product works as promised, and claims are honest."	Passive: Repurchase Intention; Willingness to Pay.	(Song et al., 2025; Su & Wan, 2024; Yeğin & Ikram, 2022)
Emerging Affective View (Novelty)	Green Brand Love; Emotional Attachment	Emotional/Relational: "I feel a deep connection to the brand's identity and values."	Active: Brand Evangelism; Brand Defense; E-Vocacy.	(Chou & Chen, 2025; M. Li et al., 2025)

Source: Research data, 2025

The prevailing consensus in studies before 2024, such as those by [11] and [12], holds that Green Perceived Value and Green Trust are the primary mediators between marketing signals and consumer behaviour. These cognitive constructs operate on a utilitarian logic: consumers calculate whether the EV delivers on its functional promises (e.g., battery range, cost savings). While valid, this cognitive perspective is increasingly criticised for its limited predictive power for high-intensity behaviours. A satisfied customer is merely one whose expectations have been met; they are not necessarily committed or immune to competitors. In the hyper-competitive EV landscape, satisfaction acts as a "hygiene factor"—a baseline prerequisite that prevents dissatisfaction but fails to generate the fervor required for active advocacy. The literature suggests that relying solely on cognitive metrics leads to a "satisfaction trap," in which high satisfaction scores do not correlate with brand defence.

In response to these limitations, a distinct "affective turn" is observed in the most recent literature (2025). (Chou & Chen, 2025) empirically demonstrate that Brand Love—defined as a passionate, emotional attachment to a brand arising from its environmental values—is a far more potent predictor of post-purchase behavior than satisfaction. Unlike the rational calculation of trust, Brand Love involves a degree of intimacy and passion. Their analysis indicates that when consumers perceive high-quality signals (e.g., brand engagement), the response is not just intellectual approval ("this car is good"), but emotional resonance ("I love what this car stands for"). This shift is pivotal for the proposed model; it argues that the "Organism"

phase is not a single step but likely a serial process: cognitive trust must be established first to mitigate risk, which then paves the way for affective love to flourish (M. Li et al., 2025).

Crucially, the literature does not suggest discarding cognitive variables; instead, it suggests repositioning them. (Su & Wan, 2024) highlight that trust functions as a risk-reduction mechanism. Without this foundation, emotional vulnerability (love) cannot occur; skepticism is the antithesis of love. Therefore, a logical theoretical integration for future research is to view Green Trust as an antecedent to Green Brand Love. This hierarchical approach—moving from Signal → Trust (Cognitive) → (Love (Affective) → (Response)—addresses the gaps identified in previous single-mediator models. By incorporating this dual-pathway, the proposed research model captures the full spectrum of the consumer's psychological journey, acknowledging that while trust makes a purchase rational, it is love that makes the consumer an evangelist.

Redefining the "Response" (RQ3)

The final component of the S-O-R framework, the "Response," has traditionally been operationalised in EV literature using passive behavioural metrics, primarily Purchase Intention or Continuous Intention (Tsai et al., 2025; Yeğin & Ikram, 2022). While these metrics provide insight into customer retention, a critical review of the 2024–2025 dataset reveals that they are increasingly inadequate for capturing the full value of the modern EV consumer. Given the long replacement cycle of automobiles, "intention to buy again" offers little immediate value to the firm. Conversely, the most recent scholarship argues for a redefinition of the outcome variable toward Active Evangelism and Defence, positing that the ultimate goal of green signalling is not merely to retain customers but to recruit them as voluntary advocates in a hostile market environment.

As noted by [13], the EV market is unique due to its high susceptibility to public scepticism and misinformation (e.g., concerns about battery safety or charging infrastructure). In this context, a "satisfied" customer who remains silent is insufficient. The literature identifies Brand Defence as a superior behavioural outcome, in which consumers actively intervene to protect the brand's reputation against negative Word-of-Mouth (WOM) or external criticism. This behavior represents a higher-order construct than traditional loyalty; it requires the consumer to expend personal social capital and psychological effort. Their analysis suggests that this "defensive" behavior is the direct behavioral manifestation of Green Brand Love. While satisfaction leads to silence, love leads to defense. Consequently, measuring Active Evangelism provides a more rigorous test of marketing effectiveness than passive retention metrics.

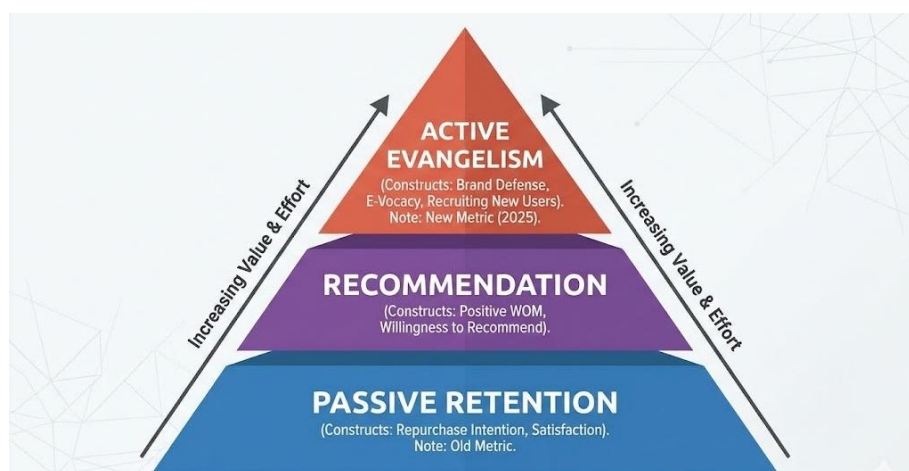


Figure 5. The Hierarchy of EV Consumer Behavioral Outcomes

Source: Research data, 2025

Furthermore, the mechanism of advocacy has evolved into what (M. Li et al., 2025) conceptualize as "E-Vocacy" (Electronic Advocacy). Unlike traditional WOM, which is dyadic and private, E-Vocacy is

public, scalable, and driven by the generation of social value. Their study on WeChat and Douyin users indicates that EV owners engage in E-Vocacy not only to support the brand but to signal their own "pro-environmental" identity to their digital network—a finding that reinforces the Eco-Prestige signal discussed in Section 5.1. As illustrated in Figure 5, the literature suggests a behavioral hierarchy: moving from Transactional Loyalty (based on price/function) to Emotional Loyalty (based on affect), and finally culminating in E-Vocacy (based on shared identity).

Critically, this shift from passive to active response challenges the validity of older models that rely solely on the Theory of Planned Behavior (TPB) to predict Intention, such as those by Yeğin and Ikram (2022). The synthesis of recent findings indicates that Intention is a poor proxy for advocacy. Therefore, to accurately model the impact of signaling in the current digital landscape, future research must adopt "Active Evangelism" as the primary endogenous variable. This alignment ensures that the "Response" in the S-O-R framework matches the intensity of the "Stimulus" (Green Innovation) and the "Organism" (Brand Love), creating a coherent and modern theoretical model.

Boundary Conditions (RQ4)

While the emerging theoretical consensus emphasizes the role of positive affect and advocacy, the widespread applicability of these models is inevitably moderated by pragmatic and psychological barriers. The transition to electric mobility is not frictionless; recent literature highlights a persistent dichotomy between consumers' "green aspirations" and their actual purchasing behaviour, which is often widened by specific anxieties. (Brückmann et al., 2021) identify "Resale Anxiety"—the fear of low residual value due to rapid battery degradation—as a critical cognitive barrier that can dampen the effect of positive brand signals. Similarly, (Tang et al., 2025) apply the social amplification of risk framework to demonstrate that perceived technological risks, particularly regarding used EVs, are often magnified through social discourse, creating a layer of resistance that marketing stimuli must overcome.

Furthermore, the efficacy of green signalling depends on the broader ecosystem. A comparative analysis of the reviewed literature reveals a stark contrast in market maturities. While Swiss consumers in (Brückmann et al., 2021) study focus on resale value, consumers in emerging markets like Indonesia, as studied by (Adzhani et al., 2025), are still grappling with fundamental "Infrastructure Anxiety" (e.g., charging availability). Their findings suggest that in markets with underdeveloped infrastructure, range anxiety can override emotional attachment, indicating a "hierarchy of needs" in EV adoption. Consequently, a robust conceptual model must acknowledge that variables such as Tech-Anxiety serve as potent moderators. These factors condition the strength of the S-O-R relationship, suggesting that Green Brand Love can effectively drive Evangelism only when these foundational psychological barriers are mitigated by credible transparency and technological assurance. This implies that the conversion of Signal to Love is not linear but is gated by infrastructural readiness.

Discussion

A critical insight from this review is the identification of the "Satisfaction Trap" in existing models. Traditional cognitive constructs (e.g., Satisfaction, Perceived Value) are revealed to be necessary but insufficient drivers of high-involvement behaviour in the EV sector. The findings from (Chou & Chen, 2025; M. Li et al., 2025) mark a significant paradigm shift: for technology-intensive and identity-relevant products like EVs, Green Brand Love—an intense affective attachment—is a superior predictor of advocacy than mere satisfaction. This suggests that the "Organism" phase of the consumer journey is hierarchical: cognitive trust must be established first to remove scepticism (Su & Wan, 2024), paving the way for affective love to flourish.

Based on the synthesis of the 33 reviewed studies, this paper proposes a novel Integrated Green Signaling Model (see Figure 6). This framework addresses the identified theoretical gaps by positioning Green Brand Love as the central mediator and Active Evangelism as the ultimate behavioral outcome.

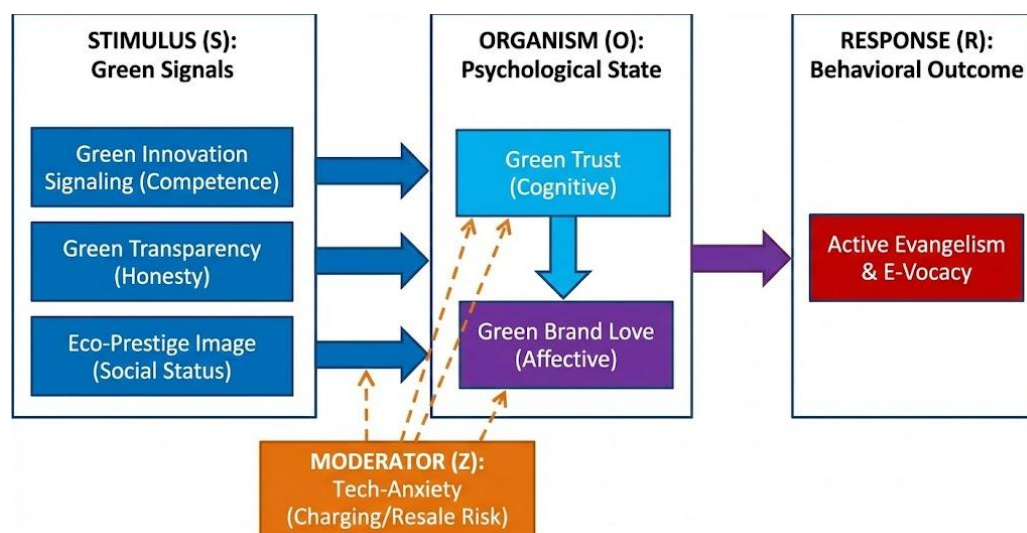


Figure 6. Integrated Green Signalling Model

Source: Research data, 2025

Explanation of the Framework:

- Stimulus (S): Comprises three distinct signalling dimensions validated in the literature: Green Innovation Signaling (Technological Competence) (Song et al., 2025), Green Transparency (Honesty/Anti-Greenwashing) (S. Li et al., 2025), and Eco-Prestige (Social Value) (Tsai et al., 2025).
- Organism (O): Proposed as a serial mediation process where Green Trust (Cognitive) acts as an antecedent to Green Brand Love (Affective). This reflects the logic that a consumer must trust the technology's claims before they can emotionally bond with the brand.
- Response (R): Redefined from passive Repurchase Intention to Active Evangelism and E-Vocacy, reflecting the proactive nature of modern brand defence described by (M. Li et al., 2025).
- Moderator (Z): Tech-Anxiety (e.g., range anxiety, resale risk) is introduced as a boundary condition. Drawing on (Brückmann et al., 2021; Tang et al., 2025), the model posits that high anxiety weakens the signalling effect; even a strong signal of innovation may fail to generate trust if concerns about infrastructure paralyze consumers.

To transition this conceptual framework from a descriptive model to an empirical roadmap, we articulate five specific propositions. These testable statements allow future researchers to validate the integrated impact of signaling theory and affective mediators in diverse market contexts. P1: Distinct green marketing signals—specifically Green Innovation and Green Transparency—have a positive and significant influence on consumer Green Trust; P2: Green Trust acts as a necessary mediator that positively influences Green Brand Love. (Rationale: Cognitive assurance must precede affective attachment); P3: Green Brand Love is a stronger predictor of Active Evangelism and E-Vocacy than Green Satisfaction alone. (Rationale: Supported by (Chou & Chen, 2025)); P4: Tech-Anxiety negatively moderates the relationship between Green Signals and Green Trust. (Rationale: Pragmatic fears identified by (Brückmann et al., 2021) dampen the credibility of marketing signals); and P5: The mediation effect of Green Brand Love on Evangelism is stronger in mature markets (low anxiety) than in developing markets (high anxiety). (Rationale: Comparing (Adzhani et al., 2025) [Indonesia] vs. Mature Market studies).

Theoretical Implications

This systematic review synthesizes the fragmented body of EV marketing literature into a cohesive theoretical narrative. The primary theoretical contribution of this study is the expansive integration of Signaling Theory within the Stimulus-Organism-Response (S-O-R) framework. While previous studies (e.g., (Su & Wan, 2024; Yeğin & Ikram, 2022)) treated "Green Marketing" or environmental awareness as monolithic stimuli, our analysis of the 2024–2025 literature reveals that consumers deconstruct marketing messages into distinct signals. Specifically, the review establishes that: 1) Green Innovation signals competence and quality (Song et al., 2025; Tsai et al., 2025); 2) Green Transparency signals integrity and mitigates greenwashing risk (S. Li et al., 2025); 3) Eco-Prestige signals social status and identity (M. Li et al., 2025).

This granular approach advances the S-O-R framework by demonstrating that specific signals trigger distinct psychological pathways; for instance, transparency primarily mitigates risk (Trust), while prestige and innovation ignite passion (Love). Furthermore, the study challenges the "Cognitive Dominance" of earlier models by validating the "Affective Turn", in which Brand Love [13] replaces satisfaction as the critical mediator of active defence.

Managerial Implications

For practitioners, particularly in the EV sector, this review suggests a strategic pivot from "persuasion" to "provenance." First, Operationalise Honest Signalling: In an era of skepticism, generic green claims are counterproductive. Automakers should leverage digital transparency tools to visualise their carbon footprint data, as [10] demonstrates that transparency helps buffer against the "boomerang effect" of greenwashing. Second, Cultivate "E-Vocacy" Communities: Instead of relying solely on paid influencers, brands should identify and empower high-passion users ("Love-groups"). As suggested by (M. Li et al., 2025), managers should shift their KPIs from traditional Customer Satisfaction Scores (CSAT) to Advocacy Metrics, such as the Brand Defense Rate and Share of Positive Voice on social platforms like WeChat or Douyin. Third, Address Anxiety to Unlock Love: In emerging markets, marketing cannot focus solely on "Green Prestige." It must simultaneously address Tech-Anxiety. Drawing from (Adzhani et al., 2025), strategic partnerships with charging infrastructure providers should be marketed as a core product feature to lower the cognitive barrier, allowing the affective bond (Love) to form.

Limitations and Future Research Directions

Despite robust findings, the current literature exhibits a distinct geographical bias, with a preponderance of studies originating in mature markets such as China and Northern Europe. There is a paucity of empirical evidence from developing economies (e.g., Indonesia, India, Brazil), where infrastructural barriers are significantly higher. Furthermore, the reliance on cross-sectional data limits the ability to infer causality. Future research should empirically test the proposed framework (Figure 6) using longitudinal or experimental designs to validate the causal link between signaling and Evangelism. Crucially, studies should investigate the model in developing market contexts. Validating whether Green Brand Love can demonstrate resilience amid the "charging anxiety" of emerging markets is the most urgent agenda for the global generalization of EV consumer theory.

E. CONCLUSION

This systematic literature review critically re-evaluates the prevailing mechanisms of consumer behavior in the electric vehicle (EV) sector, confirming a paradigm shift from cognitive-based adoption models to affect-driven advocacy frameworks. By integrating Signaling Theory into the Stimulus-Organism-Response

(S-O-R) architecture, this study synthesizes 33 empirical studies (2020–2025) to establish a novel theoretical baseline for future research.

Three definitive conclusions emerge from this synthesis. First, the construct of "Green Marketing" has matured beyond generic promotional activities into a complex ecosystem of specific signals. The literature confirms that consumers distinguish between Green Innovation (competence) and Green Transparency (integrity), with only the latter effectively immunising the brand against scepticism. Second, the review dismantles the long-standing reliance on "Satisfaction" as the ultimate metric of success. In the high-involvement context of sustainable mobility, satisfaction serves merely as a hygiene factor; it is Green Brand Love—an emotional, passionate attachment—that is the true catalyst for high-value behavioral outcomes. Third, the study redefines the "Response" variable, positing that Active Evangelism and E-Vocacy are superior indicators of marketing effectiveness than passive repurchase intentions, particularly in a digital landscape characterized by information volatility.

For industry practitioners, the implication is a strategic mandate: the era of persuasive green advertising has been superseded by one of verifiable green signalling. To cultivate a legion of brand defenders, automakers must pivot from making claims to demonstrating transparency and fostering community identity. Finally, while the current body of knowledge is robust within mature markets, a critical geographical asymmetry remains. The efficacy of these affective models in developing economies—where infrastructural anxiety rivals environmental aspiration—represents the next frontier of scientific inquiry. Validating whether Green Brand Love can demonstrate resilience amid the "charging anxiety" of emerging markets is the most urgent agenda for the global generalization of EV consumer theory.

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