

## The Effects of Sustainability-Oriented and Psychological Brand Drivers on the Brand Hate-Love Relationship

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**Abstract:** This study examines the effects of sustainability-oriented (Green brand distinctiveness and green brand passion) and psychological brand drivers (Psychological ownership and oppositional loyalty) on brand love (BL). It also explores whether the effects of these sustainability-oriented and psychological drivers on BL are amplified by sustainability influencer endorsements. Additionally, it investigates the brand hate (BH)-BL dynamics through the lens of broaden-and-build theory (BBT). Two experimental studies were conducted. Study 1 (n = 350) tested direct and multigroup hypotheses using a between-subjects experiment. Study 2 (n = 346) employed a between-subjects experiment to test mediation hypotheses. Results of Study 1 showed that sustainability-oriented and psychological brand drivers positively influence BL, and their effects on BL are stronger when participants view advertisements endorsed by a sustainability influencer (Except for psychological ownership and oppositional brand loyalty). Likewise, results of Study 2 confirmed the mediation effects of BH between all drivers (Green brand distinctiveness, green brand passion, psychological ownership, and oppositional loyalty) and BL. This study extends sustainability branding literature by investigating how sustainability influencer endorsements shape BL. The findings suggest that managers should engage sustainability influencers selectively to strengthen sustainability-based brand differentiation and passion, while also developing strong psychological brand bonds that can protect consumer relationships when negative brand emotions arise.

**Keywords:** Brand hate, brand love, broaden-and-build theory, green brand distinctiveness, green brand passion, psychological ownership, sustainability influencer endorsement.

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## INTRODUCTION

Brand love (BL) has emerged as a central construct in the study of consumer-brand relationships, garnering increasing scholarly attention in both marketing and consumer psychology literatures (ul Hassan, Khan, Mansoor, & Jamil, 2026). Today, brands are not only identifiers; they are also considered emotional assets that foster trust, love, and sustainable relational bonds (Konuk, 2023). Brand love has been associated with favorable outcomes such as loyalty, advocacy, resistance to negative information, and the development of long-term relationships (Junaid, Fetscherin, Hussain, & Hou, 2022; Shimul & Phau, 2023; ul Hassan et al., 2026). In the current competitive and volatile market environment, understanding how brands cultivate and sustain intense emotional connections has become a strategic priority for both scholars and practitioners.



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Regardless of its growing importance, the conceptual foundations of BL remain unclear, specifically with respect to its sustainability-oriented and psychological antecedents (Ghorbanzadeh et al., 2026; Santos & Schlesinger, 2026; Shimul & Phau, 2023). Previous studies reflect several drivers of BL, including self-brand congruity, attachment, passionate feeling, and perceived uniqueness (Junaid et al., 2022; ul Hassan et al., 2026). Still, much of the previous literature utilizes these antecedents in isolation, providing limited insight into how sustainability-oriented and psychological brand drivers together shape BL. Moreover, research scholars have suggested the exploration of novel antecedents and under-examined emotional states that develop consumer-brand bonds, particularly in high-involvement product categories where emotional investment is substantial (Santos & Schlesinger, 2026; ul Hassan et al., 2026). This diversified conceptualization limits an integrated and comprehensive understanding of how emotional brand relationships are established and sustained.

Social media influencer research has largely focused on conventional commercial endorsements, while comparatively less attention has been given to influencers whose content focuses on sustainability and environmentally responsible consumption. Sustainability influencers differ from general influencers because their online identities are closely associated with environmental responsibility, sustainable lifestyles, and responsible consumption (König & Maier, 2024). Such influencers can shape consumers' responses to sustainability-related products and messages by developing credible and cohesive relationships with their followers (Cheung, Leung, Chang, Shi, & Tse, 2025). However, despite growing interest in their role in encouraging sustainable consumption, comparatively little is known about whether sustainability influencer endorsement can strengthen emotional consumer-brand relationships. In particular, it remains unclear whether such endorsement strengthens the effects of sustainability-oriented and psychological brand drivers on BL. The present study addresses this gap by examining sustainability influencer endorsement as a boundary condition in the development of BL.

Although BL has received significant consideration, scholars have increasingly focused on the importance of its emotional rival—brand hate (BH)- to analyze the wide spectrum of consumer-brand relationships (Japutra, Roy, & Pham, 2021). BH, categorized by feelings such as anger, fear, and sadness, characterizes the “dark side” of brand attachment and can jointly coexist with BL, rather than swapping, positive emotional brand bonding (Fetscherin, 2019; Zhang, Zhang, & Sakulsinlapakorn, 2021). Though existing studies often examine BH and BL separately, posing limited understanding of how positive and negative brand emotions jointly affect outcomes over time. Specifically, limited empirical evidence exists to investigate whether strong positive emotional bonds can buffer, neutralize, or attenuate BH, particularly in contexts marked by external shocks or brand-related adversities.

The broaden-and-build theory (BBT) suggests that positive emotions extend individuals' cognitive and behavioral repertoires and possess an “undoing effect” that offsets/mitigates the ongoing impact of negative emotions (Fredrickson, 2004). BBT has been extensively applied in psychology and well-being research; its implications within branding, particularly in explaining the dynamic interaction between BH and BL, remain limited (ul Hassan et al., 2026). Existing branding studies rarely involve BBT to explain how positive emotional brand antecedents function as emotional buffers during brand negative outcomes or dissatisfaction. This theoretical gap confines our understanding of emotional adaptability in consumer-brand relationships and calls for empirical testing of BBT's undo hypothesis within branding frameworks.

Bridging these existing gaps, the present study examines whether sustainability-oriented and psychological brand drivers collectively play a role as positive emotional antecedents that strengthen BL and mitigate BH. Using Broaden and Build Theory (BBT), this study inspects whether these drivers enable consumers to sustain or regenerate BL while experiencing negative brand emotions. Additionally, this study advances human branding by using sustainability influencer endorsement as a novel mechanism that boosts emotional attachment to brands. To advance current understanding, this study, involving iPhone users, extends the application of BBT to consumer-brand relationships and offers practical and managerial insights to develop emotionally robust brands in dynamic market environments.

## THEORY AND HYPOTHESES

This research uses two interlinked empirical studies to explore the psychological and sustainability-oriented factors of BL. Study 1 is based on established conceptual models and empirical evidence, while Study 2 applies Fredrickson (2004) BBT to explain the emotional coexistence of BH and BL.

### Sustainability-Oriented and Psychological Brand Drivers and BL

Psychological ownership (PO) is a consumer's feeling of ownership or possessiveness and attachment to a brand; this is often referred to as “my brand” (Pierce, Jussila, & Li, 2018). It entails personal investment and fulfilling intrinsic psychological needs, such as belongingness and identity (Van Dyne & Pierce, 2004). The findings of previous studies have validated the positive effects of PO on brand engagement, brand advocacy, and trust (Hur & Ha, 2023) which in turn contributes to the emotional value and enhances love for the brand. People with PO tend to act as informal brand ambassadors, reinforcing emotional connections with brand (Kumar, Prashar, & Shah, 2023). When consumer internalize the brand as part of their self-concept, they become possessive and positive, feel emotionally connected to the brand like identity-based attachments, thus intensifying the emotional bonding with brand. Therefore,

*H<sub>1</sub>: PO positively influences BL for iPhone users.*

Green brand distinctiveness (GBD) refers to the perceived uniqueness of a brand's environmental and sustainability-related attributes relative to its competitors, extending the broader concept of brand distinctiveness proposed by Netemeyer et al. (2004). According to previous studies, perceived distinctiveness has a positive effect on brand equity and promotes advocacy, signals symbolic value and identity relevance that fosters emotional attachment, and positive behavioral outcomes (Marmat, 2023). Products with high involvement, like smart cell phones, distinctiveness in particular, play a salient part in enhancing emotional connection between consumer-brand relationships. In this vein, the iPhone has been widely recognized for its unique features, design, and ecosystem, and brand identity, altogether help to create strong emotional connections and enduring BL among its users (Pourazad, Stocchi, Michaelidou, & Pare, 2024). Thus, it is hypothesized that:

*H<sub>2</sub>: GBD positively influences BL for iPhone users.*

Green brand passion (GBP) refers to a strong positive feeling toward a brand that arises from its sustainability-related identity and actions and leads to attachment and behavioral engagement, extending the broader notion of brand passion (Bauer, Heinrich, & Martin, 2007). Passion is regarded as one of the key precursors of BL. This emotional state reflects high emotional arousal that intensifies loyalty (ul Hassan et al., 2026). When consumers value a brand's environmental commitments, such emotional involvement may strengthen trust, psychological connection, and the desire to maintain an ongoing relationship with the brand, thereby reinforcing brand commitment (Gilal, Paul, Thomas, Zarantonello, & Gilal, 2023). GBP provides a fertile ground for the development of BL as consumers internalize the brand as an important, meaningful, and emotionally significant part of their lives (Santos & Schlesinger, 2026). Accordingly, it is hypothesized that:

*H<sub>3</sub>: GBP positively influences BL for iPhone users.*

Oppositional loyalty (OL) stands for brand attachment where consumers express strong love bond with the brand by personal endorsement for the preferred brand and portray strong opposition to rival brands (Muniz & Hamer, 2001). This oppositional stance is often determined by emotional identification and symbolic self-expression rather than experiencing any direct negativity or harm from competing brand (Olson, 2018). Prior studies indicate that OL is positively related to reinforcement of brand-related identity and group belongingness (Chen & Liao, 2023). In emotionally charged markets and highly competitive environments, such as the rivalry between iPhone and Android, OL intensifies emotional attachment, deepens in-group identification and identity-based differentiation from the competition (ul Hassan et al., 2026). Therefore, OL will likely enhance positive emotional bonding with the preferred brand, leading to strong BL.

*H<sub>4</sub>: OL positively influences BL for iPhone users.*

### Sustainability Influencers and Brand Drivers

Sustainability influencers increasingly function as value-based social media endorsers, characterized by their focus on environmental responsibility, sustainable lifestyles, and responsible consumption (König & Maier, 2024). In contrast to traditional influencers and celebrities, sustainability influencers communicate sustainability-related values and practices that may enable them to develop credible and meaningful relationships with their followers. Recent research suggests that green or sustainability-oriented influencers can shape consumers' evaluations of environmentally responsible products and brands through their credibility, authenticity, and relationships with followers (Cheung et al., 2025). Although sustainability influencers have increasingly been examined in the context of sustainable consumption, their potential as commercial brand endorsers in shaping consumer–brand emotional relationships remains relatively underexplored. Integrating sustainability influencers into brand endorsement activities may therefore enhance the context in which brands are evaluated by transferring credibility, sustainability-related values, and symbolic meaning to the endorsed brand.

From consumer-brand relation perspective, endorsement through sustainability influencers may amplify the positive emotional connectivity to robust BL. This amplification mechanism is in line with previous research that has found that endorsements from credible and authentic third-party sources improve consumers' emotional evaluations and judgments, enhancing brand-related outcomes (Jamil, ul Hassan, Khan, Shah, & Nazir, 2024). Sustainability influencers can similarly transfer credibility and sustainability-related values to the focal brand, particularly when their identity and content are aligned with the environmental positioning of the endorsed product (König & Maier, 2024). In polarized, high-involvement smartphones, for example, where brands like iPhone are emotionally linked with identity and status, sustainability influencer endorsement can then serve as strong emotional triggers, enhancing the sustainability-oriented and psychological branding drivers to BL. Thus, it is expected that sustainability influencer endorsement will strengthen the positive relationships between these brand drivers and BL. Therefore,

*H<sub>5</sub>: The positive effect of (a) PO, (b) GBD, (c) GBP, and (d) OL on BL will be stronger when consumers are exposed to an iPhone ad featuring a sustainability influencer's endorsement than when they are exposed to an ad without such endorsement.*

### Mediating Role of BH

BH is defined as an intense negative emotional state characterized by feelings such as anger, fear, and sadness toward a brand, usually initiated by perceived failures, value mismatch, or external tremors (Kucuk, 2019). BH may manifest in fluctuating intensities, from mild hatred to extreme hostility or burning hate—and can result in brand avoidance, complaining behavior, or retaliation when problem is difficult to settle (Zhang et al., 2021). However, previous studies suggest that strong pre-existing positive emotional affiliation may reduce the negative intensity of BH and enable emotional retrieval (Japutra et al., 2021).

BH and BL are discussed widely in recent branding research, and it is increasingly recognized that both are not mutually exclusive; there may be love-hate confrontation within the same consumer at the same time, thus may coexist, interchangeable in intensity in reflection to situational cues and contextual influences (Ramirez, Veloutsou, & Morgan-Thomas, 2024). This emotional love-hate ambivalence is particularly prominent in high-involvement and identity-relevant product classifications, where consumers form in-depth psychological affiliations to brands. Despite of gesturing instant relationship breakup, negative brand emotions may be symbolic or may represent a transitory disruption within an otherwise meaningful consumer–brand relationship.

To clarify this emotional complexity, the present study draws on BBT (Fredrickson, 2004). BBT posits that positive emotions broaden individuals' cognitive and behavioral repertoires and help build enduring psychological resources that enhance emotional resilience. When applied to branding, this perspective suggests that strong positive emotional bonds such as BL can mitigate, counter, or “undo” the adverse effects of negative emotional states, including BH (ul Hassan et al., 2026; Zhang et al., 2021).

Consistent with BBT's positive emotions dominance over negative situational cues “undoing hypothesis”, the positive sustainability-oriented and psychological brand drivers—PO, GBD, GBP, and OL—

serve as personal emotional repertoires that diminish the severity of BH or weaken BH and enable consumers to restore or sustain BL. In other words, these drivers broaden consumers' emotional capability to endure and tolerate negative brand experiences and dissatisfaction, and to sustain relational continuity. Consequently, BH is conceptualized not as an endpoint of the relationship, but as a transformable emotional condition that mediates the relationship between positive brand drivers and BL. By placing BH as a mediator, this research answers recent calls to examine emotional resilience and retrieval mechanisms in consumer-brand relationships, particularly in contexts marked by volatility and brand-related adversity.

*H<sub>6</sub>: BH mediates the relationship between sustainability-oriented and psychological brand drivers, (a) PO, (b) GBD, (c) GBP, and (d) OL and BL, such that these drivers reduce BH, which in turn enhances BL.*

Figure 1 portrays the conceptual framework derived from the preceding literature review and hypotheses.

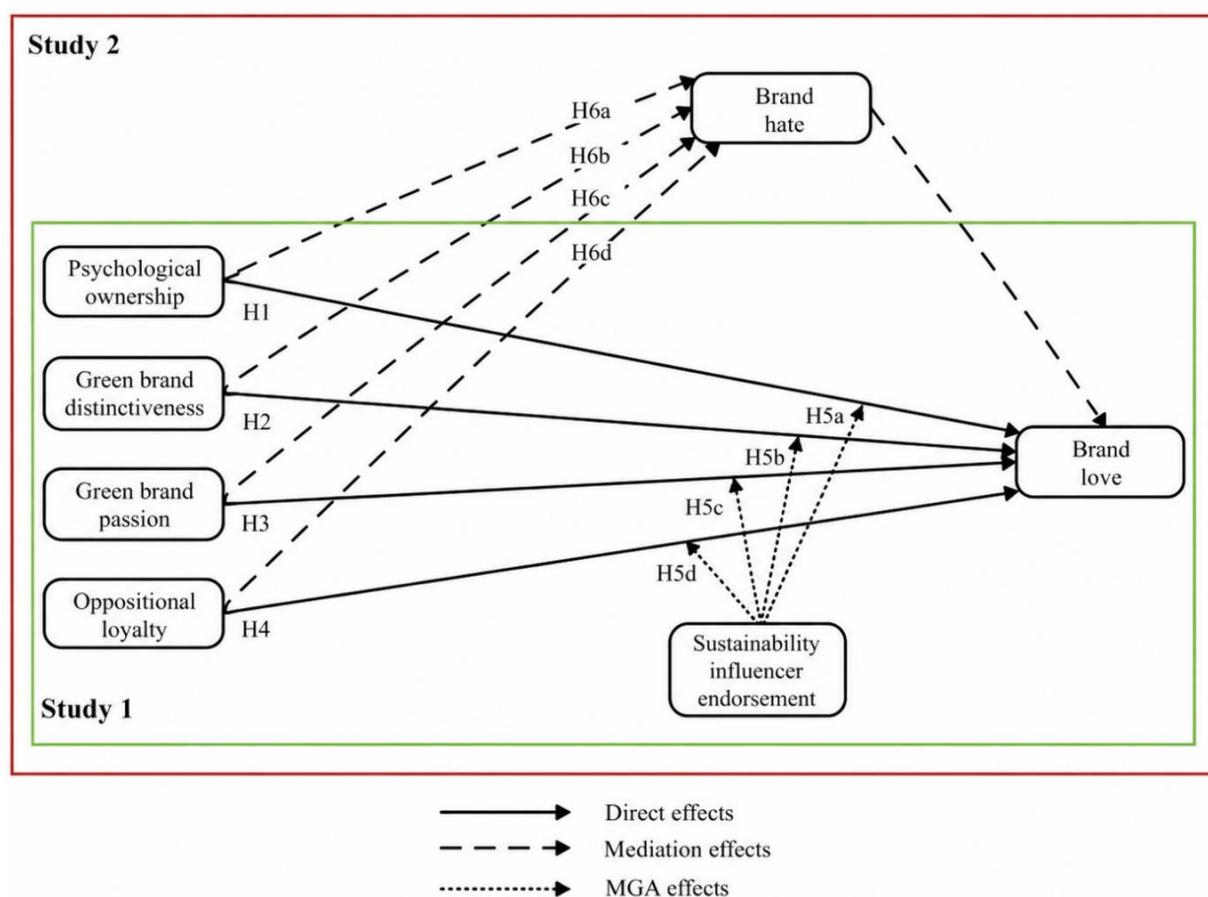


Figure 1: Conceptual Framework

## SCHEME OF STUDIES

We conducted two experimental studies. Study 1 examined the direct effects of sustainability-oriented and psychological brand drivers on BL. In addition, employing a between-subjects design, it was examined whether the effects of these brand drivers on BL were amplified in the presence of sustainability influencer endorsements. H1–H5 were empirically tested in Study 1.

Study 2 employed an experimental design. H6 was empirically tested in Study 2, in which the mediating role of BH between sustainability-oriented and psychological brand drivers and BL was established, thereby validating BBT.

### Measures and Scale Refinement

Standardized questionnaires were used for all variables, measured on a five-point Likert scale ranging from strongly disagree to strongly agree (see Appendix 1). To measure sustainability-oriented and psychological brand drivers, we adapted scales for PO (Pierce et al., 2018), GBP (Sarkar, Ponnamp, & Murthy, 2012), GBD (Netemeyer et al., 2004), and OL (Kuo & Hou, 2017). BH, as the mediating variable, was measured using the scale adapted from Zhang and Laroche (2021). Finally, BL, the dependent variable, was assessed using the scale adapted from Carroll and Ahuvia (2006). This study evaluated internal consistency, convergent validity, discriminant validity, and model fit following established recommendations (Hair, Howard, & Nitzl, 2020). Cronbach's alpha values for all constructs exceeded 0.70, indicating acceptable internal consistency. Convergent validity was confirmed, as all composite reliability (CR) values exceeded the 0.70 threshold and average variance extracted (AVE) values ranged from 0.54 to 0.80, exceeding the recommended minimum of 0.50 (Hair et al., 2020). Dijkstra–Henseler's rho\_A values ranged from 0.88 to 0.95, confirming construct reliability (Nazir, Khan, & Jamil, 2025). Details are presented in Appendix 1. Collinearity diagnostics showed all VIF values were less than 3.00, indicating no collinearity concerns (Hair et al., 2020). See Appendix 1. Additionally, the model fit was evaluated using the standardized root mean square residual (SRMR= 0.05), which fell within acceptable limits (less than 0.08) (Nazir et al., 2025). See Table 1 for details.

**Table 1: Reliability and Validity of Constructs**

| Construct                   | A    | pA   | CR   | AVE  |
|-----------------------------|------|------|------|------|
| Brand hate                  | 0.89 | 0.90 | 0.91 | 0.54 |
| Brand love                  | 0.89 | 0.89 | 0.92 | 0.61 |
| Green brand passion         | 0.92 | 0.95 | 0.94 | 0.80 |
| Green brand distinctiveness | 0.91 | 0.94 | 0.94 | 0.79 |
| Oppositional loyalty        | 0.89 | 0.94 | 0.92 | 0.75 |
| Psychological ownership     | 0.83 | 0.88 | 0.88 | 0.65 |

**Note:**  $\alpha$ = Cronbach' alpha; pA= average inter-item correlation; CR= composite reliability; and AVE= average variance extracted.

Discriminant validity was established using the Fornell–Larcker criterion, where each construct's AVE exceeded the squared correlations with other constructs (Bagozzi, 1981). Additionally, the heterotrait–monotrait (HTMT) ratio of correlations was used, with all HTMT values below 1.00, indicating satisfactory discriminant validity (Hair et al., 2020). See Table 2 for details.

**Table 2: Discriminant Validity**

| Discriminant Validity     |     | BH    | BL   | GBP   | GBD   | OL    | PO   |
|---------------------------|-----|-------|------|-------|-------|-------|------|
| HTMT ratios               | BH  |       |      |       |       |       |      |
|                           | BL  | 0.71  |      |       |       |       |      |
|                           | GBP | 0.26  | 0.17 |       |       |       |      |
|                           | GBD | 0.27  | 0.23 | 0.10  |       |       |      |
|                           | OL  | 0.21  | 0.33 | 0.05  | 0.04  |       |      |
|                           | PO  | 0.20  | 0.10 | 0.11  | 0.06  | 0.11  |      |
| Fornell-Larcker criterion | BH  | 0.74  |      |       |       |       |      |
|                           | BL  | -0.64 | 0.78 |       |       |       |      |
|                           | GBP | -0.25 | 0.17 | 0.90  |       |       |      |
|                           | GBD | -0.26 | 0.21 | -0.08 | 0.89  |       |      |
|                           | OL  | -0.20 | 0.30 | -0.02 | -0.01 | 0.87  |      |
|                           | PO  | -0.17 | 0.08 | -0.09 | -0.01 | -0.06 | 0.81 |

**Note:** BH= Brand hate; BL= Brand love; GBP= Green brand passion; GBD= Green brand distinctiveness; OL= Oppositional loyalty; PO= Psychological ownership.

## STUDY 1—DIRECT AND MULTIGROUP EFFECTS

In Study 1, we examined the direct effects of the sustainability-oriented (GBP and GBD) and psychological brand drivers (PO and OL) on BL. Additionally, we investigated whether these effects were stronger when respondents were exposed to an iPhone ad endorsed by a sustainability influencer than to an ad without an endorsement.

### Methods—Study 1

#### Research Design

We designed a between-subjects experiment to test the causal effects of sustainability-oriented and psychological brand drivers on BL. Following the recommendations of ul Hassan et al. (2026), an early focus group discussion (FGD) was conducted to design an ecologically valid stimulus. Subsequently, a randomized experiment enabled examination of direct effects as well as effects based on precise separation of ad exposure (Sustainability influencer endorsement vs. no endorsement).

#### Stimulus Design

A pre-test using an FGD (Nazir et al., 2025) was conducted with 65 undergraduate students to identify the most emotionally resonant mobile brand and type of endorsement. First, participants voluntarily ranked their most loved brands, with iPhone emerging as the top choice ( $n = 41$ ). Their responses reflected strong emotional and psychological attachment, establishing the iPhone as a highly symbolic, affect-driven brand. These results demonstrate a clear indication/rationale for selecting the iPhone as the focal brand to study love-hate confrontations for emotional constructs like BL and BH. Samsung was founded as a rival brand to the iPhone and was rated as the most frequently loved brand; thus, it served as an appropriate rival for testing OL. Furthermore, the brand iPhone is able to exhibit both admiration and frustration, love and hate traits, with dominance of positive emotions (ul Hassan et al., 2026) in line with the brand polarization framework (Ramirez et al., 2024). These grounds provided an ideal situation for examining the BBT (Fredrickson, 2004) to analyze emotional confrontation in consumer-brand relationships.

Second, in this study, we asked participants what type of endorsement they thought was suitable for the current study, apart from conventional celebrity endorsement. Maximum participants favored endorsement by a sustainability influencer ( $n = 39$ ). Later, we created two identical ads for the iPhone 17 Pro Max, each displaying similar information and colors. One ad was modified with an additional tagline, "Envision your most admired sustainability influencer staying connected with iPhone 17 Pro Max," for experimental manipulation. Details of stimuli are available in Appendix 2. Such manipulation techniques have been applied in prior literature to influence consumer perceptions through emotionally framed taglines, media cues, and variations in product-related information (Nazir et al., 2025). All the FGD participants were excluded from the main study.

#### Sample Design and Data Collection

This study used non-probability purposive sampling to recruit iPhone users in Pakistan. Participants were approached through social media advertisements and personal networks, where an online survey link was shared. Eligibility criteria required participants to be 18 years or older and iPhone users for at least 1 year to ensure a meaningful assessment of brand relationships (ul Hassan et al., 2026). Willing participants who followed the link were directed to the study's webpage. First, they were informed of the purpose of the research and of their voluntary participation (With the ability to withdraw at any time). Subsequently, they were randomly assigned to either the experimental group (Exposure to an iPhone ad with a sustainability influencer endorsement) or the control group (Exposure to an iPhone ad without an endorsement). Once the participants viewed the assigned ad, they were asked to answer questions about all brand drivers and BL. Even with using non-random sampling, the study's validity was confirmed through random group assignment and voluntary participation, aligning with existing literature (Nazir et al., 2025; ul Hassan et al., 2026).

A total of 350 usable responses were collected, where 166 participants belonged to the experimental group and 184 fell in the control group. Demographic analysis reflects that the maximum number of respondents are from the young age group (20-30 years, 56.8%). 34% (n = 134) of respondents reported earning a monthly income between PKR 100,000-150,000, followed by 32% (n = 115) earning between 150,000-200,000. Regarding gender, a balanced distribution of males (n = 182, 52%) and females (n = 168, 48%) was recorded.

### Results–Study 1

The results of Study 1 revealed significant positive effects of all drivers on BL, supporting hypotheses H1–H4. It was found that PO ( $\beta = 0.31, p < 0.001$ ), GBD ( $\beta = 0.24, p < 0.001$ ), GBP ( $\beta = 0.28, p < 0.001$ ), and OL ( $\beta = 0.21, p < 0.001$ ) showed statistically significant positive effects. See summary of results in Table 3.

**Table 3: Summary of Results**

| Study   | Hypothesis       | B    | SD   | T    | P     | R <sup>2</sup> | f <sup>2</sup> | Decision  |
|---------|------------------|------|------|------|-------|----------------|----------------|-----------|
| Study 1 | H1. PO->BL       | 0.31 | 0.06 | 5.02 | 0.001 | 0.73           | 0.17           | Supported |
|         | H2. GBD->BL      | 0.24 | 0.06 | 4.12 | 0.001 |                | 0.13           | Supported |
|         | H3. GBP->BL      | 0.28 | 0.06 | 4.39 | 0.001 |                | 0.18           | Supported |
|         | H4. OL->BL       | 0.21 | 0.05 | 4.03 | 0.001 |                | 0.09           | Supported |
| Study 2 | H6a. PO->BH->BL  | 0.12 | 0.03 | 4.37 | 0.001 | 0.45           |                | Supported |
|         | H6b. GBD->BH->BL | 0.16 | 0.03 | 5.59 | 0.001 |                |                | Supported |
|         | H6c. GBP->BH->BL | 0.17 | 0.03 | 5.53 | 0.001 |                |                | Supported |
|         | H6d. OL->BH->BL  | 0.13 | 0.03 | 4.68 | 0.001 |                |                | Supported |

**Note:** PO= Psychological ownership; GBD= Green brand distinctiveness; GBP= Green brand passion; OL= Oppositional loyalty; BH= Brand hate; BL= Brand love.

Furthermore, the multi-group analysis (MGA) assessed whether the effects of branding factors on BL varied by sustainability influencer endorsement. Results indicated that participants in the experimental group demonstrated stronger BL compared to the control group, particularly for GBD ( $t = 2.77; p < .05$ ) and GBP ( $t = 2.19; p < .05$ ), supporting hypotheses H5b and H5c. However, no significant differences were found for PO and OL across groups, leading to the rejection of H5a and H5d. See Table 4 for details.

**Table 4: Multi-group Analysis**

| Study   | Hypothesis   | B    |      | Path difference | t    | p    | Decision      |
|---------|--------------|------|------|-----------------|------|------|---------------|
|         |              | EG   | CG   |                 |      |      |               |
| Study 1 | H5a. PO->BL  | 0.34 | 0.24 | 0.10            | 0.87 | 0.38 | Not supported |
|         | H5b. GBD->BL | 0.41 | 0.15 | 0.26            | 2.77 | **   | Supported     |
|         | H5c. GBP->BL | 0.40 | 0.15 | 0.25            | 2.19 | **   | Supported     |
|         | H5d. OL->BL  | 0.15 | 0.12 | 0.02            | 0.18 | 0.89 | Not supported |

**Note:** \*\*=  $p < 0.05$ ; PO= Psychological ownership; GBD= Green brand distinctiveness; GBP= Green brand passion; OL= Oppositional loyalty; BL= Brand love.

## STUDY 2–MEDIATION EFFECTS

This study aimed to test the mediating effect of BH, a negative emotional response, within the existing model from Study 1, to evaluate the BBT. Explicitly, the mediation effect for hypothesis (H6) was examined in Study 2.

### Methods–Study 2

Using a non-probability purposive sampling technique through social media, a total of 346 iPhone users were recruited for this study, and an experimental design was employed. Participants were iPhone users for at least

one year, aged 18 or above, and participation was voluntary. Participants first completed the measures of the sustainability-oriented and psychological brand drivers examined in Study 1. They were then presented with a short text describing a hypothetical environmental report concerning the iPhone (see Appendix 3). The report raised concerns about issues such as electronic waste, product repairability, resource-intensive production, frequent device replacement, and the consistency between the brand's sustainability claims and its environmental practices. The stimulus was designed to introduce sustainability-related negative information about the focal brand in a controlled manner and thereby create conditions under which negative brand emotions could emerge. To avoid presenting unverified information about the brand as factual, participants were clearly informed that the report was hypothetical and had been developed solely for research purposes. They then responded to the adapted BH measure (Zhang et al., 2021) and the BL measure used in Study 1. This sequence allowed the study to examine whether previously held sustainability-oriented and psychological brand evaluations could buffer negative affect and help preserve BL following exposure to unfavorable sustainability-related information. A total of 346 usable responses were collected. Demographic analysis shows that the maximum respondents are related to adult age group (20-30 years, 47.9%). 34% (n = 129) of respondents reported earning a monthly income between PKR 100,000 and 150,000. Regarding gender, a balanced distribution of males (n = 184, 53%) and females (n = 162, 47%) was recorded.

## Results–Study 2

BH mediated the effect of PO on BL ( $PO \rightarrow BH \rightarrow BL: \beta = 0.12, p < 0.001$ ), supporting H6a. Similarly, BH mediated the relationship, showing a significant impact of GBD on BL via an indirect path ( $GBD \rightarrow BH \rightarrow BL: \beta = 0.16, p < 0.001$ ), endorsing H6b. In the same way, GBP also validated a significant mediating effect ( $GBP \rightarrow BH \rightarrow BL: \beta = 0.17, p < 0.001$ ), confirming H6c. Finally, BH mediated the path between OL and BL by showing a positive indirect effect ( $OL \rightarrow BH \rightarrow BL: \beta = 0.13, p < 0.001$ ), supporting hypothesis H6d. Altogether, these results confirm that pre-positive emotional affiliation can buffer against negative emotional impact, eventually sustaining BL, thus authenticating the Undo hypothesis in a branding context (See Table 3 for the results).

## DISCUSSION

The findings of Study 1 confirm that PO, GBD, GBP, and OL function as robust sustainability-oriented and psychological drivers of BL, highlighting the multi-layered emotional foundations of consumer–brand relations. PO arose as a key factor, endorsing that when consumers recognize a brand as “theirs,” they have strong emotional attachment and develop deep relational confidence, similar to previous research that focuses on ownership-driven self-extension and emotional attachment (Hur & Ha, 2023). GBD findings showed that it significantly enhanced BL, identifying that uniqueness, design innovation, and status signaling foster stronger emotional resonance, particularly in high-involvement brands such as iPhone (Marmat, 2023). In the same way, GBP increased BL through continuous emotional investment and brand commitment over time, consistent with studies that passionate bonding helps consumers to accept and tolerate deficiencies and remain loyal to the brand, neglecting their mistakes despite minor dissatisfaction (Gilal et al., 2023). Markedly, OL appeared as the strongest predictor of BL, emphasizing the influential role of identity-driven commitment and rival denial in reinforcing emotional attachment. This result is in line with previous work explicitly showing that emotionally charged brand rivalries deepen commitment (Kuo & Hou, 2017).

The results related to sustainability influencer endorsement strengthen the effects of sustainability-oriented brand drivers on BL. Specifically, GBD and GBP demonstrated significantly stronger effects under the sustainability-influencer endorsement condition, suggesting that sustainability-oriented influencers can intensify the emotional and symbolic value attached to a brand's environmental positioning. This finding is consistent with emerging evidence that sustainability-focused influencers can shape consumers' responses to green products and brands through credibility, authenticity, and value alignment (Cheung et al., 2025; König & Maier, 2024). In contrast, the effects of PO and OL remained largely unaffected by sustainability influencer endorsement, indicating that these psychological connections may be more deeply internalized and less

sensitive to external endorsement cues. Such a pattern is also consistent with the view that ownership-based and identity-defensive brand relationships are firmly embedded in consumers' self-concepts and therefore exhibit greater stability (ul Hassan et al., 2026). Overall, the findings extend influencer endorsement literature by showing that sustainability influencers do not uniformly strengthen all brand relationships; rather, their influence appears more pronounced for sustainability-oriented brand drivers that are directly aligned with the influencer's environmental identity and message.

Study 2 shows that BH mediates the relationship between sustainability-oriented and psychological brand drivers and BL, offering new insight into the parallel or coexistence of positive and negative brand emotions. Even in the presence of BH, existing strong drivers confront the effect of negativity by continuing to exert a positive—albeit attenuated—effect on BL. This finding underpins evolving perspectives that BH does not always signal the breakup or relationship termination; it may be a temporary emotional disruption in the consumer-brand relationship (Japutra et al., 2021; Ramirez et al., 2024; ul Hassan et al., 2026). The mediation effect proposes that sustainability-oriented and psychological brand drivers help emotional pillars for consumers to navigate dissatisfaction, permitting BL to persist by mitigating negative affect. This emotional connectivity highlights the importance of developing deep sustainability-oriented and psychological brand bonding that can withstand periods of disappointment, unpredictability, or external pressure.

These unique mediation findings in the branding context support the application of the BBT. Endorsing the undoing hypothesis stance of BBT's (Fredrickson, 2004), sustainability-oriented and psychological brand drivers provide positive acts as an emotional catalyst that buffers the effects of BH by enhancing emotional resilience. These drivers facilitate tolerance, identity reinforcement, forgiveness, and defensive commitment, enabling consumers to sustain BL despite negative brand experiences. This study extends BBT by elaborating on how positive brand emotions function as resilience-building mechanisms in consumer–brand relationships.

### **Practical Implications**

This study highlights a new framework for brand managers by demonstrating sustainability-oriented and psychological brand drivers and sustainability influencer endorsement effects in shaping BL jointly, even under negative emotional arousal conditions. The findings recommend that developing BL requires more than functional dominance; it requires the deliberate instigation of emotional and identity-based brand linkages that build robust relational resilience.

First, managers should view sustainability influencers as selective amplifiers of brand relationships. Their endorsements are most effective in strengthening BL through GBD and GBP, particularly when the influencer's sustainability identity aligns with the brand's environmental positioning. Managers should therefore use sustainability influencers to reinforce sustainability-oriented brand associations rather than deeply rooted psychological bonds such as PO and OL.

Second, the study offers practical insights into building emotional branding strategies grounded in the BBT. Endorsing the Undo hypothesis, sustainability-oriented and psychological brand drivers work as personal emotional resources that mitigate negative effects such as BH. Managers can operationalize these drivers by fostering consumer involvement and co-creation to boost ownership, emphasizing environmental distinctiveness and status cues to reinforce uniqueness, creating engaging sustainability experiences to sustain brand passion, and enclosing brand narratives around shared identity to reinforce brand loyalty. These tactics help consumers cognitively re-evaluate the negative experiences and endure emotional attachment during periods of displeasure or crisis.

Finally, the robust role of OL illustrates the strategic worth of managed rivalry positioning. In digitally saturated environments where brand comparisons and social discourse are prominent, managers can take advantage of identity-based differentiation leverage by encouraging consumers to express their own brand preference in contrast to available alternatives. When employed ethically and carefully, practicing this approach can reinforce in-group identification and emotional defensive criterion that buffer negative brand information. Findings of the study as a whole suggest that brands that anchor emotion-centric strategies and identity-driven antecedents can build natural immunity against negative sentiment, fostering deeper forgiveness and long-term loyalty as BL.

## Theoretical Implications

Study 1 contributes that PO, GBD, GBP, and OL are sustainability-oriented and psychological brand drivers that collectively cultivate and shape BL and enhance endorsement literature. By empirically demonstrating their transforming feeling to sustainability influencer endorsements, the study extends existing endorsement theories beyond celebrities and general social media influencers to include sustainability influencers as symbolic human brands. This extends parasocial interaction and identity-signaling ideologies by showing that sustainability influencer endorsements strengthen emotional and symbolic attachments to brands selectively rather than uniformly reinforcing all the types of brand attachment equally. In doing so, the study provides a nuanced understanding of how identity-driven endorsers interact with consumer psychology to strengthen emotional brand relationships.

Study 2 extends psychology theory by enlarging the BBT into consumer–brand bonding through empirical validation of its Undo hypothesis. By clearly demonstrating that BH mediates the relationship between sustainability-oriented and psychological brand drivers and BL, the study reveals the coexistence of positive and negative brand emotions and their dynamic positions while interacting jointly. These positions suggest that BH is not as fierce as a devil or terminal outcome, but it is a transitional emotional state that can be mitigated by positive emotional resources embedded in sustainability-oriented and psychological brand drivers. Thus, the findings deepen emotional branding research by introducing emotional resilience and recovery as central mechanisms in sustaining BL, contributing a more evolving and psycho-sustainability-grounded framework for future studies on brand ambivalence and emotional complexity.

## Limitations

Despite its contributions, this study has several limitations. First, we operationalized sustainability influencer as a general figure rather than any specific influencer, which was helpful for stimulus control but limited insight into influencer–brand congruity; future research should inspect specific sustainability influencers and status fame. Second, BH was induced through a hypothetical text-based sustainability stimulus, which may not fully reflect reactions to an actual brand failure. Future research could use more realistic sustainability-related failure scenarios. Third, the focus on the iPhone as a high-involvement, symbolically rich brand may constrain generalizability; thus, there is an opportunity to test this by extending to low-involvement or utilitarian brands. Finally, although MGA yielded meaningful insights, measurement invariance was not formally established before MGA; future research should apply rigorous invariance testing (e.g., MICOM) to strengthen the validity of group comparisons.

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**INFORMED CONSENT STATEMENT:** Informed consent was obtained from all participants prior to their participation in the study. All data were anonymized to protect participants' confidentiality.

**TRANSPARENCY:** The authors confirm that the manuscript provides an honest, accurate, and transparent account of the study; that no important features have been omitted; and that any deviations from the planned study have been explained. The study followed appropriate ethical practices throughout the research and writing process.

**COMPETING INTERESTS:** The authors declare that they have no competing interests.

**AUTHORS' CONTRIBUTIONS:** All authors contributed equally to the conception and design of the study. All authors have read and approved the final version of the manuscript.

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## Appendix 1:

| Construct/items                                                                                            | Loadings | VIF  |
|------------------------------------------------------------------------------------------------------------|----------|------|
| Psychological ownership (Pierce et al., 2018)                                                              |          |      |
| I agree that iPhone is my brand.                                                                           | 0.76     | 1.60 |
| I feel that the iPhone belongs to me.                                                                      | 0.73     | 1.65 |
| I feel a very strong sense of ownership over the iPhone.                                                   | 0.87     | 1.91 |
| I feel as though I own an iPhone.                                                                          | 0.87     | 1.94 |
| Green brand distinctiveness (Netemeyer et al., 2004)                                                       |          |      |
| iPhone is distinct from other smartphones brands in its approach to environmental sustainability.          | 0.86     | 2.64 |
| iPhone really stands out from other smartphone brands because of its environmental sustainability efforts. | 0.89     | 2.99 |
| iPhone's approach to environmental sustainability is very different from that of other smartphone brands.  | 0.90     | 2.63 |
| iPhone is unique among smartphone brands in terms of its environmental sustainability practices.           | 0.89     | 2.82 |
| Green brand passion (Sarkar et al., 2012)                                                                  |          |      |
| I find iPhone's environmental sustainability efforts very appealing.                                       | 0.88     | 2.89 |
| iPhone's commitment to environmental sustainability delights me.                                           | 0.91     | 2.85 |
| iPhone's environmental sustainability efforts captivate me.                                                | 0.90     | 3.43 |
| I find iPhone's commitment to environmental sustainability fascinating.                                    | 0.89     | 2.83 |
| Oppositional loyalty (Kuo & Hou, 2017)                                                                     |          |      |
| Envision a rival cellular brand of iPhone before responding to the set of questions below:                 |          |      |
| I will oppose the rival brand of iPhone, even if others praise it.                                         | 0.84     | 2.42 |
| I will not try the rival iPhone brand, even though it is widely discussed.                                 | 0.85     | 2.44 |
| I will not recommend rival brands over the iPhone, even if they are considered better.                     | 0.89     | 2.21 |
| I will avoid any association with the rival iPhone brand.                                                  | 0.88     | 2.51 |
| Brand hate (C. Zhang & Laroche, 2021)                                                                      |          |      |
| I feel furious at the iPhone.                                                                              | 0.71     | 1.73 |
| I feel revulsion toward the iPhone.                                                                        | 0.75     | 1.96 |
| I have a feeling of loathing for the iPhone.                                                               | 0.73     | 1.94 |
| I feel fear when I think about the iPhone.                                                                 | 0.70     | 1.62 |
| I feel threatened when I think about the iPhone.                                                           | 0.71     | 1.68 |
| I feel worried when I think about the iPhone.                                                              | 0.75     | 1.91 |
| I feel disappointed when I think about the iPhone.                                                         | 0.71     | 1.69 |

| Construct/items                                   | Loadings | VIF  |
|---------------------------------------------------|----------|------|
| I feel displeased when I think about the iPhone.  | 0.77     | 2.15 |
| I feel enchanted when I think about the iPhone. * | 0.77     | 2.17 |
| Brand love (Carroll & Ahuvia, 2006)               |          |      |
| iPhone is a wonderful brand.                      | 0.76     | 1.85 |
| iPhone makes me feel good.                        | 0.75     | 1.90 |
| iPhone is totally awesome.                        | 0.80     | 2.09 |
| iPhone makes me very happy.                       | 0.80     | 2.18 |
| I love the iPhone.                                | 0.78     | 1.91 |
| iPhone is a pure delight.                         | 0.76     | 1.88 |
| I'm very attached to my iPhone.                   | 0.79     | 2.15 |

**Note:** \* refers to reverse items.

#### Appendix 2:

Respondents in the experimental group viewed an advertisement (Figure A1) using the tagline "Envision your most admired sustainability influencer staying connected with an iPhone 17 Pro Max", while for the control group, a similar picture was presented without the tagline (see Figure A2).



Figure A1. Sustainability influencer endorsement stimulus



Figure A2. No-endorsement control stimulus

### **Appendix 3: Environmental concerns raised over iPhone sustainability practices**

A recent hypothetical independent environmental assessment has raised concerns about the sustainability practices associated with the iPhone. According to the report, although the brand frequently communicates its commitment to reducing environmental impact, several aspects of its smartphone production and consumption practices may not fully reflect these sustainability claims.

The report raises concerns about the large amount of electronic waste generated when consumers replace older devices, the difficulty and cost associated with repairing certain smartphone components, and the continued use of resource-intensive materials in device production. It also questions whether some environmental claims communicated to consumers provide a complete picture of the environmental impact created across the product's lifecycle.

The report further suggests that frequent product upgrades may encourage consumers to replace functioning devices sooner than necessary, potentially contributing to electronic waste and unnecessary resource consumption.

These concerns have led some observers to question whether the iPhone's sustainability positioning fully matches its environmental practices.