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Beyond the click: Building brand bonds through online customer experience

超越點擊：從線上顧客體驗建立品牌連結

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Abstract: Creating compelling customer experiences has become a critical strategy for firms seeking to enhance competitiveness and expand market share. Although prior literature has recognized customer experience as a multidimensional construct, empirical investigations remain limited, especially within the context of online customer experience. Addressing this gap, the present study examines the effects of four key dimensions of online customer experience, namely informativeness, entertainment, social presence, and sensory appeal, on customer-brand identification (CBI). Moreover, this study incorporates product type (i.e., search goods vs. experience goods) as a moderating variable to assess category-based differences in how experiential dimensions affect CBI.

Based on 300 valid responses collected from an online survey of Apple iPhone consumers, structural equation modeling results reveal that informativeness, social presence, and sensory appeal exert significant positive effects on CBI. Furthermore, the impacts of all four experiential dimensions on CBI are amplified in the context of experience goods relative to search goods. The current study offers both theoretical and managerial contributions. Theoretically, it clarifies how online customer experience shapes brand identification and demonstrates that this effect differs across product types. Managerially, it highlights that enhancing informativeness, social presence, and sensory design is

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particularly effective in strengthening CBI and loyalty, especially for experience goods.

Keywords: Informativeness, entertainment, social presence, sensory appeal, consumer-brand identification, product type.

摘要：打造引人入勝的顧客體驗已成為企業提升競爭力與擴大市占之關鍵策略。儘管既有研究普遍將顧客體驗視為多構面概念，在「線上顧客體驗」脈絡中的實證檢證仍相對不足。為補此缺口，本文檢驗四項關鍵線上顧客體驗構面（資訊性、娛樂性、社會臨場感與感官吸引力）對顧客－品牌認同（customer-brand identification, CBI）之影響；並將產品類型（搜尋品與經驗品）納入為調節變數，以探討不同產品類別下各體驗構面對 CBI 影響之差異。

本研究以 Apple iPhone 消費者為對象實施線上問卷調查，回收 300 份有效樣本。結構方程模式分析結果顯示：資訊性、社會臨場感與感官吸引力正向影響 CBI。此外，四個體驗構面在經驗品情境下對 CBI 的影響均強於搜尋品。本文之貢獻兼具理論與管理意涵：在理論面，釐清線上顧客體驗形塑品牌認同之機制，並證實其效果隨產品類型而異；在管理面，本研究指出強化資訊提供、社會臨場設計與感官刺激可有效提升 CBI 與品牌忠誠，且於經驗品情境下之效果尤為顯著。

關鍵詞：資訊性、娛樂性、社會臨場感、感官吸引力、顧客－品牌認同、產品類型。

1. Introduction

In the era of rapid digital transformation and intensifying market competition, online customer experience has become a critical driver of brand differentiation and customer loyalty (Lemon and Verhoef, 2016; Verhoef et al., 2009). Nearly 90% of companies now regard customer experience as a core source of competitive advantage (Gartner, 2016), prompting the rise of customer experience management as a specialized field focused on delivering integrated,

personalized, and value-rich interactions across digital touchpoints (Fatma, 2014).

Unlike traditional marketing approaches centered on transactions, the modern view defines customer experience as a holistic response encompassing cognitive, emotional, behavioral, sensory, and social dimensions (Schmitt, 1999). With digital platforms playing a central role in mediating brand-consumer interactions, the creation of immersive and emotionally engaging online experiences is increasingly critical for shaping consumer perceptions and fostering lasting brand relationships (Bleier et al., 2019; Keiningham et al., 2017). Recent research further highlights the growing importance of personalization, interactivity, and sensory richness, particularly in light of the adoption of immersive technologies such as AR and VR, in enhancing brand connection and meaning (Kim et al., 2023; Zeng et al., 2023).

Although customer experience has become a well-focused topic in marketing literature, empirical research that links online customer experience to deeper psychological outcomes, particularly customer–brand identification (CBI), remains scarce. Rooted in social identity theory, CBI refers to the extent to which consumers perceive an overlap between their self-concept and a brand (Lam et al., 2010) and serves as a key antecedent of long-term loyalty (He and Li, 2011; Stokburger-Sauer et al., 2012). While prior studies have predominantly examined brand attributes (e.g., prestige, uniqueness) and service-related factors (e.g., CSR, service quality) as antecedents (Currás-Pérez et al., 2009; He and Li, 2011; Stokburger-Sauer et al., 2012), the role of online experiential dimensions in shaping CBI remains largely underexplored.

Digital touchpoints play a critical role in fostering emotional resonance and identity-driven brand relationships, as emphasized in recent literature (France et al., 2025; Hollebeek and Macky, 2019; Ray et al., 2025). Building on this foundation, a growing body of research has examined how online customer experience shapes consumer attitudes and behaviors. Yet, limited attention has been paid to how specific experiential dimensions, such as informativeness, entertainment, social presence, and sensory appeal, translate into deeper

identity-based connections with brands. Although Bleier et al. (2019) demonstrated that these experiential elements influence willingness-to-pay, their implications for CBI remain unclear.

Furthermore, little is known about whether the effects of these experiential dimensions on CBI differ across product types. The distinction between search and experience goods, where the former can be evaluated prior to purchase and the latter only through use, provides a meaningful context for examining how consumers form brand-related judgments in digital environments (Dimoka et al., 2012; Pavlou et al., 2007). When evaluating experience goods, consumers tend to rely more on experiential cues due to higher uncertainty and limited pre-purchase information (Dai et al., 2020; Huang et al., 2009). Therefore, understanding whether the influence of online customer experience on CBI differs across product types is theoretically and managerially significant.

In summary, existing research has yet to offer an integrated empirical framework linking online customer experience to CBI. To address this gap, the present study investigates how four experiential dimensions, informativeness, entertainment, social presence, and sensory appeal, differentially affect CBI across product types. Drawing on Bleier et al. (2019) and responding to the call of Keiningham et al. (2017), this study further examines the moderating role of product type (search goods vs. experience goods) to account for contextual variations in the strength of these relationships. Specifically, the current study addresses the following research questions:

1. How do informativeness, entertainment, social presence, and sensory appeal in online environments affect CBI?
2. Does product type (search goods vs. experience goods) moderate these relationships?

By answering these questions, this research makes several important contributions. It deepens understanding of how specific experiential elements in online environments shape identity-based brand relationships, filling an important gap in the CBI literature. By integrating customer experience with social identity theory, it also provides empirical support for a multidimensional

framework of customer experience in digital contexts. Beyond academic contributions, the findings offer practical guidance for marketers: firms can strengthen brand identification and loyalty by tailoring digital interface strategies to product type, for example, emphasizing informativeness for search goods and sensory richness for experience goods.

2. Conceptual framework

Recent scholarship emphasizes the need to understand how marketing strategies, viewed through the lens of social identity theory, shape and strengthen customer-brand relationships. The central premise of this perspective is that when a brand fulfills consumers' self-definition needs, it evokes a sense of recognition and belonging, which in turn motivates consumers to engage in supportive brand-related behaviors (Lam et al., 2010). Prior studies have consistently demonstrated that CBI is a significant predictor of brand loyalty (Currás-Pérez et al., 2009; He and Li, 2011; Lam et al., 2010; Stokburger-Sauer et al., 2012; Torres et al., 2018).

This study adopts the conceptual framework proposed by Bleier et al. (2019), which identifies four key dimensions of online customer experience: informativeness, entertainment, social presence, and sensory appeal. These dimensions are posited to fulfill consumers' self-definition needs in distinct ways, by providing relevant knowledge, stimulating emotional engagement, creating human-like interaction, and delivering immersive sensory stimuli, thereby strengthening identification with the brand. Importantly, the proposed four-dimensional structure of online customer experience is theoretically grounded and aligns with two influential typologies in the literature, those of Rose et al. (2011) and Verleye (2015).

Informativeness serves as a fundamental driver of CBI. When brands provide rich and relevant information, consumers feel more capable of solving problems, gain confidence in their purchase decisions, and experience a greater sense of control. These informative encounters facilitate rational brand evaluations and strengthen cognitive alignment with the brand, reflecting the

cognitive states identified by Rose et al. (2011), such as perceived usefulness, information processing, and perceived control. Similarly, Verleye (2015) emphasizes that informativeness contributes to the intellectual and functional benefits consumers gain through value co-creation with the brand.

In contrast, entertainment contributes to CBI by eliciting positive affective responses such as enjoyment, emotional resonance, and psychological immersion. Entertaining content, ranging from humor and storytelling to gamified interactions, fosters a pleasurable brand environment that engages consumers emotionally and strengthens their attachment to the brand. This corresponds to affective states in Rose et al. (2011), particularly enjoyment and emotional engagement, and to hedonic experience in Verleye (2015) typology, which captures the pleasure and enjoyment consumers derive from brand interactions.

Social presence further enhances CBI by fulfilling consumers' relational and communal needs. Features such as real-time chat, avatars, or interactive narratives simulate human presence and foster connection, empathy, and mutual recognition. These socially rich interactions deepen consumers' emotional bonds with the brand, a process that Rose et al. (2011) describe as emotional connection and perceived social interaction, and that Verleye (2015) classifies as social experience.

Finally, sensory appeal contributes to CBI through immersive, multi-sensory engagement. Rich visual design, ambient soundscapes, animations, and interactive interfaces stimulate consumers' senses, generating affective arousal and emotional responses. This sensory dimension not only enhances experiential enjoyment but also shapes individualized brand meaning and memory. It bridges affective states identified by Rose et al. (2011) with the hedonic and personal experience dimensions emphasized by Verleye (2015). Empirical findings (Rathnayaka, 2022; Zha et al., 2025) show that sensory stimuli reinforce emotional connection and brand loyalty, emphasizing the key role of sensory cues in identity-based brand relationships.

By establishing these theoretical linkages, the present study advances a conceptually integrated and empirically grounded model of how differentiated

forms of online experience contribute to CBI. Moreover, by incorporating product type (i.e., search versus experience goods) as a moderating variable, this study enables a more nuanced analysis of how product characteristics shape the relationship between online customer experience and CBI. The complete conceptual framework is illustrated in Figure 1.

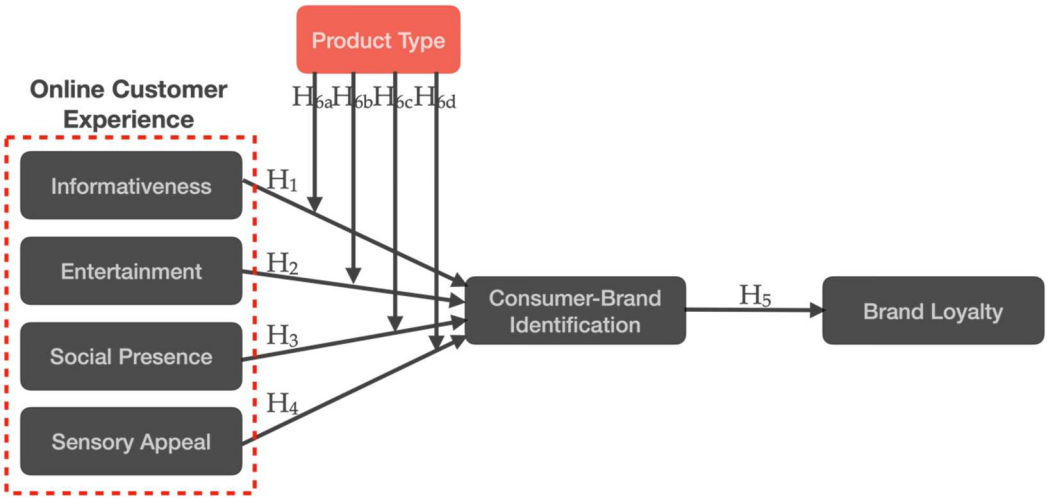


Figure 1
Conceptual framework

3. Literature review and research hypotheses

3.1 Social identity theory and CBI

Customer identification has become a central theme in recent relationship marketing research, as scholars increasingly adopt it to explain the formation, maintenance, and reinforcement of customer–brand relationships (Ahearne et al., 2005; Haumann et al., 2014; Homburg et al., 2009; Lam et al., 2010; Torres et al., 2018). Social identity theory (Tajfel and Turner, 1979) provides the theoretical foundation for this line of inquiry, positing that individuals define themselves based on their membership in social groups, which fulfill self-definition needs such as self-continuity, self-distinctiveness, and self-enhancement (Bhattacharya and Sen, 2003; Shamir, 1991; Tajfel and Turner, 1985).

When individuals perceive that a group or organization reflects their self-concept, they feel recognized and experience a sense of belonging, commonly referred to as social identification (Kunda, 1999). This perspective, originally applied in organizational behavior to explain member-institution identification and its positive effects on motivation and performance (Dutton et al., 1994; Riketta, 2005; Van Knippenberg, 2000), was later widely adopted in the marketing domain. Scholars argue that customer identification reflects an informal, psychological bond between consumers and brands, thus complementing traditional relationship marketing perspectives (Homburg et al., 2009). For instance, Homburg et al. (2009) integrated the service-profit chain theory with social identity theory to demonstrate that, beyond enhancing satisfaction, building customer identification is crucial for driving loyalty and improving financial performance. Likewise, Bagozzi and Dholakia (2006) applied social identity to modify the theory of planned behavior, emphasizing the role of group identification in shaping consumer intentions.

Depending on the social entity involved, various forms of customer identification have been proposed, including customer–company identification (Ahearne et al., 2005; Homburg et al., 2009), CBI (Lam et al., 2010; Stokburger-Sauer et al., 2012; Torres et al., 2018), group/community identification (Bagozzi and Dholakia, 2006; Dholakia et al., 2004), team identification (Bodet and Bernache-Assollant, 2011), and school identification (Balaji et al., 2016).

In recent years, researchers have extended the concept of customer identification to the online marketing context, recognizing the central role of digital platforms in shaping identity-based brand relationships. Popp and Wilson (2018), for example, identified three types of identification on Facebook fan pages: identification with the page, with other users, and with the brand, all of which positively influenced customer loyalty and word-of-mouth. Similarly, Torres et al. (2018) found that electronic word-of-mouth and social media marketing efforts enhance CBI, thereby increasing consumers' willingness to pay a premium.

Building on this foundation, recent studies emphasize that interactive digital environments activate social identification through personalized, immersive, and community-driven experiences. Kim et al. (2025) demonstrate that social identity within digital communities shapes users' intentions to purchase virtual products in the metaverse. Extending this line of inquiry, Nikhashemi et al. (2025), drawing on signaling and social identity theories, link endorser credibility and virtual brand community engagement to consumer well-being, showing how engagement fosters stronger brand identification. Likewise, Baena (2023) illustrates how Real Madrid F.C.'s digital marketing strategies cultivate social identification and emotional attachment among fans, reinforcing the role of community-based digital experiences in enhancing brand identification.

Taken together, these findings underscore the growing relevance of social identity theory for understanding customer behavior in digital settings and point to the importance of examining how specific online experience constructs function as symbolic triggers of CBI across technological interfaces.

3.2 Online customer experience

Improving customer experience has become a widely recognized strategy for enhancing business performance and fostering emotional value for customers, and has consequently attracted growing attention in marketing research (Keiningham et al., 2017). Yet, there is still no consensus regarding the dimensions that constitute customer experience. Many earlier studies conceptualized it as a unidimensional (e.g., Biedenbach and Marell, 2010; Chen and Lin, 2015; Klaus and Maklan, 2013) or dual-dimensional construct (e.g., Foroudi et al., 2016; Rose et al., 2012), which limits conceptual comprehensiveness.

In contrast, other researchers have advanced a multidimensional perspective, emphasizing that customer experience encompasses cognitive, emotional, sensory, and social dimensions (Bleier et al., 2019; Keiningham et al., 2017; Verhoef et al., 2009). Despite this theoretical advancement, empirical validation, particularly in online shopping contexts, remains insufficient (Pizzi et al., 2021).

Among the limited empirical contributions, Bleier et al. (2019) conducted a series of experiments using real-world website designs to explore how different online experience elements affect consumer behavior. Following Bleier et al. (2019), the current study adopts a four-dimensional framework of online customer experience, comprising informativeness (cognitive dimension), entertainment (emotional dimension), social presence (social dimension), and sensory appeal (sensorial dimension) to examine their respective effects on CBI.

3.2.1 Informativeness

Informativeness refers to the degree to which a website provides useful, accurate, and relevant information, and is categorized as the cognitive component of online experience. It enables consumers to process information rationally, make comparisons, and solve problems during decision-making (Gentile et al., 2007). Informativeness reflects the functional and goal-directed nature of online experience (Verhoef et al., 2009) and is often associated with objective, non-personal content (Schlosser et al., 2006). Studies have shown that informative content enhances brand attitudes by reinforcing consumers' trust and reducing uncertainty (Hausman and Siekpe, 2009; Hsieh et al., 2014). More recent findings further confirm that well-structured, content-rich digital environments significantly improve decision confidence and engagement (Li et al., 2022; Shen, 2023).

3.2.2 Entertainment

Entertainment refers to the extent to which a website evokes enjoyment and affective stimulation beyond its transactional utility (Babin et al., 1994). Beyond hedonic value, entertainment can function as an identity-building mechanism by fostering affective customer engagement (Calder et al., 2009), a positively valenced, brand-related motivational state characterized by vigor, dedication, and absorption (Hollebeek and Macky, 2019). Through visually rich design, interactivity, gamification, and playful content, digital environments create immersive and emotionally resonant experiences that enable users to connect the

brand with their self-concept, thereby strengthening CBI (Childers et al., 2001; Mathwick et al., 2001). Entertainment may also operate through parasocial pathways, where anthropomorphic cues, human presenters, or socially present interfaces simulate relational bonds that personalize the brand and reduce psychological distance (Epley et al., 2007; Labrecque, 2014; Qiu and Benbasat, 2009; Trope and Liberman, 2010). In digital media contexts, intrinsically enjoyable experiences and affective engagement are positively associated with downstream effectiveness, and influencer-driven parasocial ties can further translate entertainment into persuasion and loyalty intentions (Calder et al., 2009; Hollebeek et al., 2014; Sokolova and Kefi, 2020).

Recent research suggests that entertainment's role in identity formation is contingent on consumers' goal orientation and product context. When utilitarian motives prevail, diagnostic and instrumental cues take precedence over affective stimulation, thereby limiting entertainment's symbolic impact (Akdim et al., 2022; Li et al., 2020). Conversely, in hedonic or identity-expressive contexts, especially those involving immersive, interactive, or high-involvement digital environments, entertainment is more likely to engage affective and relational pathways that foster brand identification. This effect is particularly evident when entertainment is accompanied by socially present guidance or credible interpersonal cues (Labrecque, 2014; Qiu and Benbasat, 2009; Rodríguez-Ardura et al., 2024; Weathers et al., 2007). These findings highlight the contextual boundaries of entertainment's effectiveness in shaping identity-relevant brand meaning.

3.2.3 Social presence

Social presence refers to the perceived warmth, human connection, and interpersonal cues conveyed through a website interface (Gefen and Straub, 2003). As the core of the social dimension of online customer experience, it is fostered by features such as customer reviews, live chat, embedded social media, and influencer endorsements, which simulate human interaction and enhance users' sense of connection and social closeness (Darke et al., 2016; Wang and

Huff, 2007). High social presence has been linked to increased enjoyment, browsing duration, purchase intention (Hassanein and Head, 2007), and loyalty (Cyr et al., 2007). More recent work confirms that incorporating interactive elements such as real-time feedback and community discussions can significantly enhance perceived authenticity and strengthen identification (Daynes-Kearney and Gallagher, 2024; Vo et al., 2025).

3.2.4 Sensory appeal

Although the online environment limits direct sensory input, digital interfaces can still evoke sensorial engagement through rich visual and auditory stimuli. Sensory appeal refers to the richness and aesthetic quality of the website content (Steuer, 1992) and constitutes the sensorial component of customer experience. According to Schmitt (1999), sensory stimulation shapes perceptions of product quality and brand image. Despite the absence of physical touch or scent, online sensory cues such as colors, images, animations, and videos can influence users' cognitive evaluations and emotional responses (Schlosser, 2003; Zajonc, 1980). More recent studies further demonstrate that immersive, multisensory website design significantly enhances brand engagement and memory recall (Alexander et al., 2025; Xi et al., 2024).

3.3 The effect of online customer experiences on consumer-brand identification

According to social identity theory (Tajfel, 1982), individuals form psychological attachments to social entities, including brands, when those entities reflect, affirm, or enhance their self-concept. In digital environments, customer experiences serve a symbolic role by signaling the degree to which a brand aligns with consumers' self-definition. When online experiences satisfy identity-related needs such as cognitive clarity, emotional resonance, social belonging, and aesthetic alignment, they are more likely to foster stronger CBI. Drawing on this perspective, the current study proposes that four dimensions of online customer experience positively influence CBI, as reflected in the

following hypotheses.

3.3.1 Informativeness and CBI

Informativeness contributes to the identity formation process by enabling consumers to cognitively evaluate whether a brand aligns with their personal values and goals. When brand websites present clear, relevant, and helpful information, they reduce uncertainty and empower consumers to make meaningful judgments (Verhoef et al., 2009). This cognitive alignment helps fulfill the self-definition need for self-consistency and self-clarity, facilitating identification (Stokburger-Sauer et al., 2012). Moreover, informative experiences enhance brand credibility and perceived transparency, both of which increase consumer trust, an important precursor to psychological attachment (Barijan et al., 2021). Accordingly, informativeness not only facilitates consumer decision-making but also operates as a symbolic cue, enabling the brand to function as a cognitive extension of the self.

H1: Informativeness is positively related to customer–brand identification.

3.3.2 Entertainment and CBI

Social identity theory suggests that emotional gratification contributes to identity reinforcement by linking positive affect to identity-relevant stimuli (Bhattacharya and Sen, 2003). When brand websites offer entertaining content such as interactive design, gamification, or immersive storytelling, they create enjoyable moments that deepen the consumer's affective bond with the brand (Muntinga et al., 2011; Xi and Hamari, 2020). These positive emotions become associated with the brand and contribute to its internalization within the consumer's self-concept. Moreover, entertainment encourages repeat engagement, which increases symbolic familiarity and, over time, strengthens consumers' identification with the brand.

H2: Entertainment is positively related to customer–brand identification.

3.3.3 Social presence and CBI

Social identity theory holds that identity formation is rooted in the sense of belonging to a social group (Tajfel and Turner, 1985). By offering customer reviews, live chat, or community discussions, online platforms can foster social contexts that connect individuals emotionally to the brand and to other users (Gefen and Straub, 2003; Torres et al., 2018). These socially enriched environments help fulfill consumers' need for self-definition through social inclusion, thereby facilitating identification with the brand as a shared social symbol. Recent research further shows that social presence cues significantly increase CBI by fostering a sense of brand community (Song et al., 2019).

H3: Social presence is positively related to customer–brand identification.

3.3.4 Sensory appeal and CBI

Sensory appeal provides aesthetic and affective stimulation that activates emotional and symbolic processing. It allows consumers to experience pleasure and meaning through the design and atmosphere of digital interfaces (Krishna, 2012; Schmitt, 1999). Although physical contact is limited in online contexts, digital stimuli such as color schemes, imagery, music, and layout design can evoke rich sensory experiences that influence emotional engagement and symbolic brand perception (Deng and Poole, 2010; Steuer, 1992). These sensory cues contribute not only to immediate user enjoyment but also to deeper psychological responses such as immersion, attachment, and brand association (Shahid et al., 2022). By stimulating multiple senses, sensory-rich environments can strengthen consumers' affective connection to a brand and enhance the likelihood of incorporating the brand into their self-concept, thereby facilitating CBI.

H4: Sensory appeal is positively related to customer–brand identification.

3.4 The effect of CBI on brand loyalty

Brand loyalty refers to a consumer's psychological commitment and

consistent preference for a specific brand over time, often reflected in repeated purchase behavior (Jacoby and Olson, 1970; Oliver, 1999). It plays a pivotal role in shaping long-term consumer–brand relationships and is widely regarded as a core strategic asset for firms (Hallowell, 1996; Sui and Baloglu, 2003). Scholars commonly differentiate brand loyalty into two dimensions: attitudinal loyalty, which reflects consumers' emotional attachment and favorable attitudes toward a brand, and behavioral loyalty, which refers to the actual repurchase behavior driven by brand preference (Baloglu, 2002; Jones and Taylor, 2007; Watson et al., 2015).

CBI, grounded in social identity theory (Tajfel and Turner, 1979), has emerged as a key psychological antecedent of brand loyalty. When consumers identify with a brand, they perceive it as a reflection or extension of their self-concept, gaining symbolic value and emotional satisfaction from the relationship (Ahearne et al., 2005; Bhattacharya and Sen, 2003). This identification strengthens consumers' sense of belonging and motivates them to maintain the brand relationship to preserve self-consistency and emotional rewards (McMillan and Chavis, 1986). As a result, individuals with strong brand identification are more likely to demonstrate loyalty through repeat purchases, brand advocacy, and resistance to competitors (He and Li, 2011; Stokburger-Sauer et al., 2012).

Empirical evidence has consistently demonstrated that CBI positively influences both attitudinal and behavioral dimensions of brand loyalty. Consumers who perceive high congruence between their identity and the brand are more likely to remain committed over time and act as brand ambassadors in their social circles (Bhattacharya and Sen, 2003; Kim et al., 2001). Furthermore, CBI is expected to enhance brand loyalty.

H5: Consumer–brand identification is positively related to brand loyalty.

3.5 The moderating effects of product type

Products can be classified as search goods or experience goods, depending on the ease with which their quality can be evaluated (Nelson, 1970). Search

goods are products whose quality and attributes can be evaluated prior to purchase, through information search and comparison, such as electronics or clothing. In contrast, experience goods, including restaurants or hair salons, are difficult to assess until consumption, as their quality is more subjective and context dependent. Darby and Karni (1973) later extended this typology by introducing credence goods, whose quality may remain unverifiable even after consumption due to a lack of consumer expertise (e.g., medical procedures or auto repairs). For such products, consumers often rely on indirect sources like expert reviews or word-of-mouth to guide their decisions. This tripartite framework, comprising search, experience, and credence goods, has been widely adopted in marketing research to explain variations in consumer behavior.

Several studies have shown that product type influences how consumers process information and respond to marketing stimuli. For example, Bleier et al. (2019) found that informativeness enhances purchase intention more effectively for search goods, while social presence and sensory appeal are more influential for experience goods. Based on this finding, the present study categorizes products into search goods and experience goods and investigates whether product type moderates the relationship between different online customer experience dimensions and CBI.

Compared to physical shopping, online shopping involves greater uncertainty due to the absence of direct sensory interaction, making consumers more reliant on online cues to evaluate products (Dimoka et al., 2012; Pavlou et al., 2007). This uncertainty is especially pronounced for experience goods, where pre-purchase evaluation is inherently limited (Hong and Pavlou, 2014; Kim and Krishnan, 2015). Huang et al. (2009) suggest that consumers interpret online information differently depending on product type, prompting the need for tailored marketing strategies. Weathers et al. (2007) demonstrated that visual and interactive website design is more effective for experience goods, as it helps simulate the consumption experience.

Consumers often seek additional information for experience goods through multimedia simulations, third-party reviews, and user-generated content, such as

sample videos or virtual try-ons (Chevalier and Mayzlin, 2006; Weathers et al., 2007). These tools serve as proxy touchpoints that are especially valuable for evaluating subjective product attributes. In contrast, consumers of search goods are more likely to rely on concise, fact-based information and are less inclined to engage with multimedia or long-form reviews (Huang et al., 2009). Consequently, the same customer experience cues may have stronger effects for experience goods, as consumers are more attentive and responsive to immersive or emotionally engaging stimuli when evaluating such products (West and Broniarczyk, 1998). Building on this reasoning, the present study proposes that the effects of informativeness, entertainment, social presence, and sensory appeal on CBI are stronger for experience goods than search goods.

H6a: The positive effect of informativeness on CBI is stronger for experience goods than for search goods.

H6b: The positive effect of entertainment on CBI is stronger for experience goods than for search goods.

H6c: The positive effect of social presence on CBI is stronger for experience goods than for search goods.

H6d: The positive effect of sensory appeal on CBI is stronger for experience goods than for search goods.

4. Methodology

4.1 Data collection

This study aims to examine the effects of various online customer experience dimensions on CBI and to explore whether these effects differ between search goods and experience goods. Given time and resource constraints, and to ensure broad geographical reach and respondent diversity, data were collected via Amazon Mechanical Turk (MTurk), a widely recognized and validated online crowdsourcing platform used in academic research. MTurk offers several advantages, including access to a large and demographically diverse participant pool, greater cost-effectiveness, and faster data collection

compared to traditional offline methods (Buhrmester et al., 2011).

To address the subjective and context-dependent nature of product type classification (Girard et al., 2003), the present study conceptualizes product type as a continuous construct rather than a categorical one. This approach recognizes that perceptions of whether a product is a search or an experience good can vary across individuals and contexts. In line with this reasoning, we selected the smartphone category as the focal product because of its inherently hybrid characteristics. Smartphones combine searchable attributes, such as technical specifications, price, and brand reputation (Lu et al., 2014), with experiential attributes that can only be assessed through use, including tactile interface, ergonomic design, and usage experience (Yoo et al., 2010).

Within this category, Apple's iPhone was selected as the focal product. This choice reflects the brand's global popularity, its large and demographically diverse user base, and the frequent digital interactions iPhone users maintain with Apple's online platforms. Notably, iPhone users often engage with Apple's official website both before and after purchase, making them particularly relevant for research on brand identification (e.g., Lam et al., 2010). Thus, the iPhone provides an appropriate and robust context for examining how product-type perceptions and digital touchpoint experiences shape consumer responses.

Participants were pre-screened using two eligibility criteria: (1) having purchased and used an iPhone within the past 12 months, and (2) having visited Apple's official website at least once for product-related browsing. After receiving an introduction to the study, participants were informed of the study purpose, assured of confidentiality, and asked to provide informed consent before proceeding to the questionnaire. A total of 330 responses were collected through MTurk. To ensure data quality, the survey included attention-check questions and screening items. Responses were excluded if they failed attention checks, showed excessively short completion times (e.g., under 2 minutes), or originated from duplicated IP addresses. After eliminating such invalid responses, 300 valid samples were retained for analysis (effective rate = 90.9%).

Overall, the sample was predominantly female, accounting for 74.7% of the participants, while male respondents made up 25.3%. In terms of educational background, the majority of participants held a university degree (96.7%), with a smaller proportion possessing a master's degree (2.7%) or a doctorate (0.7%). Regarding monthly disposable income, nearly half of the respondents (48.7%) reported having less than US$320, followed by 42.3% reporting income between US$320 and US$950. Only a small percentage reported higher income brackets, with 4.7% falling within US$950-1,600, 2.0% between US$1,600-2,550, and 2.3% exceeding US$2,550.

In terms of Apple product usage experience (e.g., iPhone, Mac, iPad), 32.3% of respondents had used Apple products for more than four years, and 27.0% had used them for two to four years. Participants with one to two years of usage accounted for 15.3%, while 5.7% had used them for six to twelve months, and 3.0% for three to six months. Notably, 16.7% of respondents were relatively new users, having used Apple products for less than three months. Finally, the age of respondents ranged from 19 to 61 years old, with a mean age of 22.83 years and a standard deviation of 6.15, indicating that the sample was relatively young overall.

4.2 Measures

The survey instrument was developed by adapting validated scales from prior studies to measure the key constructs of this study. Informativeness was assessed with a three-item scale from Luo (2002), and entertainment was measured with items from Hausman and Siekpe (2009). Social presence was evaluated using the scale developed by Gefen and Straub (2003), adapted to capture how iPhone users perceive social connection in online settings such as Apple's website. These items reflected perceptions of interpersonal warmth and emotional engagement when interacting with other users or Apple representatives, consistent with the conceptualization of social presence in technology-mediated contexts (Shen and Khalifa, 2008).

Sensory appeal was measured using items from Jiang and Benbasat (2007)

and operationalized to reflect the vividness and multisensory richness of Apple's online presentation. This included the use of high-resolution imagery, animations, and multimedia product showcases that stimulate visual and auditory engagement. Such design features are especially prominent in Apple's digital ecosystem and support users' perception of quality and excitement, consistent with prior research on online sensory cues (Fiore et al., 2005). CBI was measured using items adapted from He and Li (2011) and Stokburger-Sauer et al. (2012), while brand loyalty was assessed with the well-established scale by Chaudhuri and Holbrook (2001).

Lastly, consumers' perceptions of the product's degree of "experiential" versus "search" attributes were measured using a four-item scale: two items assessed the extent to which the product was experience-based, and two items assessed the degree to which it was search-based. This approach captures individual variation in how products are perceived. The items were adapted from Bleier et al. (2019) and Weathers et al. (2007), both of which provide validated scales for evaluating product attributes in online contexts. To construct the measure, the two search-oriented items were reverse-coded so that higher scores reflected stronger experiential characteristics. These were then averaged with the two experience-oriented items to compute an overall perceived product-type score, where higher values indicate greater perception as an experience good and lower values indicate stronger perception as a search good.

To ensure content validity and clarity, all measurement items were reviewed by two marketing scholars during the questionnaire development stage. The experts evaluated the accuracy of the wording, conceptual alignment, and contextual appropriateness of the items. Prior to formal data collection, a pretest was conducted with 30 participants who met the screening criteria. Based on their feedback, minor modifications were made to improve item phrasing and ensure the overall quality of the instrument. The detailed survey items used in this study are presented in Appendix 1.

5. Results

5.1 Validity and reliability

To ensure the robustness of the measurement model, we conducted a confirmatory factor analysis (CFA) in Mplus version 8.0, following the two-step approach recommended by Anderson and Gerbing (1988). Initially, one item from the CBI scale (i.e., I am interested in knowing other people's opinions towards Apple) was excluded due to a standardized factor loading below the acceptable threshold of 0.50. The revised model demonstrated an acceptable fit: $\chi^2(329) = 1104.97$, $\chi^2/df = 3.36$, CFI = .92, TLI = .90, RMSEA = .08, and SRMR = .05, meeting the recommended criteria by Hu and Bentler (1995).

All retained items had statistically significant factor loadings ($p < .001$), indicating strong convergent validity (Anderson and Gerbing, 1988). Internal consistency was supported by Cronbach's alpha values ranging from .87 to .97, and composite reliability values also between .87 and .97, both exceeding the recommended threshold of .70 (Nunnally and Bernstein, 1994). Table 1 presents the descriptive statistics, correlations, HTMT, and reliability indicators. Inter-construct correlations were all positive and statistically significant ($p < .001$), ranging from .17 (between CBI and product type) to .81 (between entertainment and sensory appeal). Discriminant validity was confirmed, as the square root of the average variance extracted (AVE) for each construct exceeded the correlations with other constructs, in line with the criterion proposed by Fornell and Larcker (1981). Furthermore, the HTMT values ranged from .25 to .77, all below the conservative threshold of .85 (Henseler et al., 2015), providing additional support for discriminant validity. The highest HTMT value was observed between entertainment and social presence (.77), while all other inter-construct HTMT values were substantially lower, indicating that the constructs are empirically distinct and non-redundant.

Table 1
Descriptive statistics, correlations, HTMT, and reliability indicators for the constructs

	Mean	S.D.	1	2	3	4	5	6	7
Informativeness	4.58	1.26	.89	.65	.60	.61	.37	.45	.45
Entertainment	4.14	1.37	.72	.91	.77	.65	.35	.47	.42
Social presence	3.73	1.35	.53	.77	.88	.66	.37	.43	.31
Sensory appeal	4.49	1.34	.74	.81	.69	.84	.41	.50	.48
CBI	3.29	1.61	.39	.36	.40	.42	.90	.61	.25
Brand loyalty	4.37	1.67	.47	.51	.43	.56	.56	.91	.25
Product types	5.22	.97	.55	.42	.23	.47	.17	.22	.79
Cronbach's α			.92	.93	.90	.87	.97	.95	.87
Composite reliability			.92	.94	.91	.87	.97	.95	.87

Note.
Values on the diagonal represent the Average Variance Extracted (AVE) for each construct.
The upper triangle of the matrix displays the Heterotrait-Monotrait ratio (HTMT) values, while the lower triangle presents the Pearson correlation coefficients.
All correlations are statistically significant at the $p < .01$ level.

To assess the potential threat of common method variance (CMV), Harman's single-factor test was conducted. The unrotated exploratory factor analysis revealed that the first factor accounted for 50.48% of the total variance, marginally exceeding the commonly accepted threshold of 50% (Podsakoff et al., 2003). Given the limitations of this test, we further conducted a confirmatory factor analysis (CFA) by loading all items onto a single latent factor. The single-factor model fit the data poorly ($\chi^2(350) = 5385.45$, CFI = .45, TLI = .40, RMSEA = .22, SRMR = .20) compared to the hypothesized measurement model, with a Chi-square difference test confirming a significantly better fit for the latter ($\Delta\chi^2(21) = 4280.48$, $p < .001$). Together, these results suggest that CMV is unlikely to threaten the validity of the findings.

Finally, to validate the four-dimensional structure of the online customer

experience scale, we tested a series of competing measurements. Following Verleye (2015), principal axis factoring was first applied to extract two- and three-dimensional structures from the original 12 items, after which confirmatory factor analyses were conducted to compare four alternatives: a one-dimensional structure, a two-dimensional structure, a three-dimensional structure, and the hypothesized four-dimensional structure.

The results show that the hypothesized four-dimensional structure provided the best overall fit. Compared to the one-dimensional model ($\chi^2(344) = 1778.79$, $\chi^2/df = 5.17$, CFI = .84, TLI = .83, RMSEA = .12, SRMR = .06), the chi-square difference was significant ($\Delta\chi^2 = 673.82$, $\Delta df = 15$, $p < .001$). Significant improvements were also found over the two-dimensional model ($\chi^2(340) = 1522.55$, $\chi^2/df = 4.48$, CFI = .87, TLI = .86, RMSEA = .11, SRMR = .06), with a significant chi-square difference ($\Delta\chi^2 = 417.58$, $\Delta df = 11$, $p < .001$) and the three-dimensional model ($\chi^2(336) = 1310.94$, $\chi^2/df = 3.81$, CFI = .89, TLI = .88, RMSEA = .10, SRMR = .07), the chi-square difference was also statistically significant ($\Delta\chi^2 = 205.97$, $\Delta df = 7$, $p < .001$). Taken together, these results confirm that the four-dimensional structure provides a significantly better representation of the data than the one-, two-, and three-dimensional alternatives, supporting both the robustness and conceptual appropriateness of the hypothesized measurement model.

5.2 Measurement invariance

To assess whether the measurement model was equivalent across groups categorized by perceived product type, we conducted a series of measurement invariance tests. The product type variable was dichotomized via a median split. A one-way ANOVA confirmed that respondents perceiving the focal product as experience goods reported significantly higher product-type perception scores ($M = 5.88$, $SD = 0.76$) than those perceiving it as search goods ($M = 4.56$, $SD = 0.67$) ($F(1, 298) = 254.40$, $p < .001$), supporting the validity of the grouping approach.

Multi-group confirmatory factor analyses were then used to test four levels

of invariance. The configural model ($\chi^2(474) = 1273.91$) served as the baseline model. The metric invariance model ($\chi^2(496) = 1296.84$) did not differ significantly from the configural model ($\Delta\chi^2(22) = 22.93$, $p = .41$), supporting metric invariance. Adding equality constraints on item intercepts (scalar model: $\chi^2(518) = 1323.96$) also produced a non-significant chi-square difference from the metric model ($\Delta\chi^2(22) = 27.13$, $p = .20$), indicating scalar invariance. This supports the comparability of latent means across groups (Milfont and Fischer, 2010).

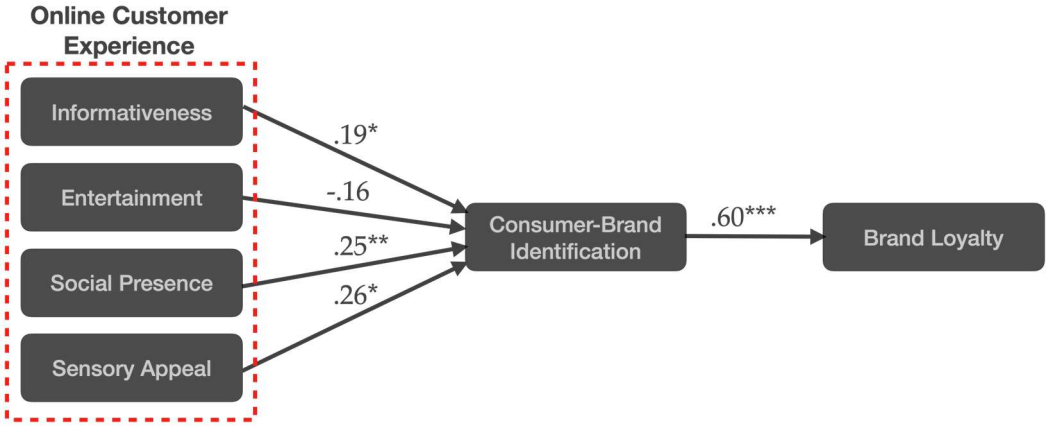
Finally, the strict invariance model ($\chi^2(565) = 1837.34$) significantly worsened fit relative to the scalar model ($\Delta\chi^2(47) = 513.38$, $p < .001$), indicating that strict invariance was not supported. Despite this, the establishment of scalar invariance is generally considered sufficient for meaningful group comparisons, confirming acceptable measurement equivalence across product-type groups.

5.3 Hypothesis test

This study examines the impact of four online customer experience dimensions on CBI and the subsequent effect of CBI on brand loyalty. To test the proposed relationships (H1 through H4 and H9), a structural model was estimated. The model demonstrated an acceptable overall fit, with all key indices meeting or approaching recommended thresholds ($\chi^2(240) = 866.27$, $\chi^2/df = 3.61$, CFI = .93, TLI = .91, RMSEA = .09, SRMR = .09)(Hu and Bentler, 1995). Figure 2 presents the structural model results, including standardized path coefficients and significance levels.

H1 proposed a positive relationship between informativeness and CBI, which was supported ($\beta = .19$, $t = 2.04$, $p < .05$, $f^2 = .012$). H2, predicting a positive effect of entertainment on CBI, was not supported ($\beta = -0.16$, $t = -1.23$, $p = .22$, $f^2 = .013$). H3, which suggested that social presence would positively influence CBI, was supported ($\beta = .25$, $t = 2.71$, $p < .01$, $f^2 = .026$). H4, proposing a positive effect of sensory appeal on CBI, was also supported ($\beta = 0.26$, $t = 2.11$, $p < .05$, $f^2 = .021$). Finally, H9, which posited that CBI would positively influence brand loyalty, was strongly supported ($\beta = 0.60$, $t = 14.92$, p

< .001, f^2 = 0.548), reinforcing the critical role of brand identification in fostering customer loyalty.



$\chi^2_{(240)}$ = 866.27, χ^2/df = 3.61, CFI = .93, TLI = .91, RMSEA = .09, SRMR = .09

*p<.05, **p<.01, ***p<.001.

Figure 2

Results of structural model

To further investigate whether the effects of online customer experience on CBI vary by product type, a moderated regression analysis was conducted using PROCESS Model 1 (Hayes, 2017). Hypotheses H6a through H6d were tested to examine the moderating role of product type. All variables were mean-centered prior to analysis to minimize potential multicollinearity. The results are presented in Table 2.

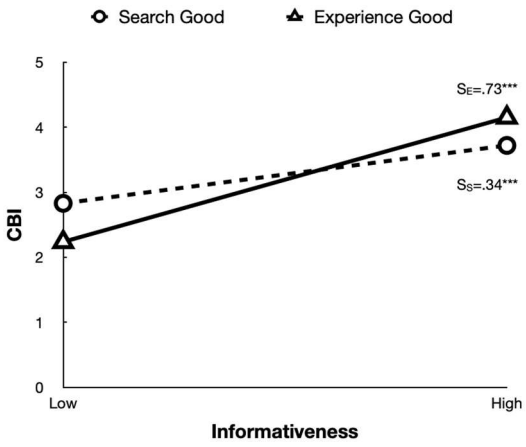
Table 2
Moderated Regression Analysis

	Independent variables							
	Informativeness		Entertainment		Social presence		Sensory appeal	
	β	t-value	β	t-value	β	t-value	β	t-value
Constant	3.17***	34.52	3.19***	35.53	3.22***	37.73	3.21***	35.51
Independent variable	.53***	6.94	.38***	5.51	.40***	6.07	.49***	7.09
Product type (PT)	-.06	-.64	.08	.86	.16	1.75	-.02	-.25
IV × PT	.20**	3.14	.19**	3.30	.22***	3.82	0.14*	2.46
F(3,296)	21.06***		19.12***		25.52***		22.17***	
R2	.18		.16		.21		.18	

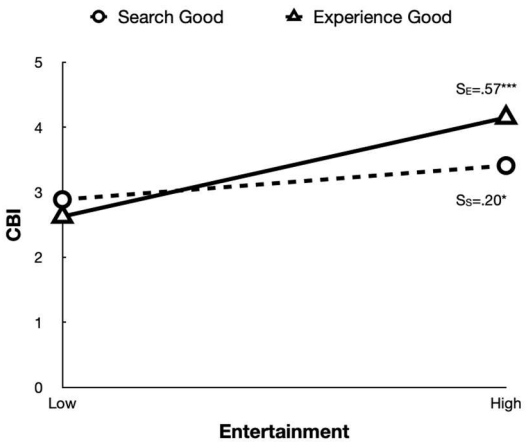
*p<.05, **p<.01, ***p<.001.

H6a posited that the positive effect of informativeness on CBI would be stronger for experience goods than for search goods. The interaction term between informativeness and product type was statistically significant (β = .20, t = 3.14, p < .01, f^2 = .034), supporting the hypothesized moderating effect. Following Aiken and West's (1991) procedure, interaction effects were further examined by plotting simple slopes at ±1 standard deviation of product type to represent experience and search goods, respectively (see Figure 3a). The effect of informativeness on CBI was significant for both product types, but stronger for experience goods (β = .73, t = 7.12, p < .001) than for search goods (β = .34, t = 3.61, p < .001), confirming H6a.

(a) Informativeness × Product Type

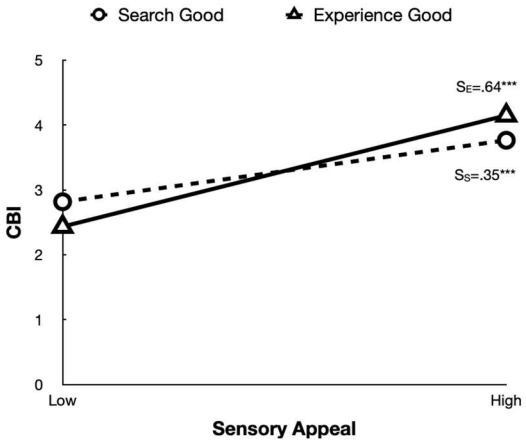


(b) Entertainment × Product Type



(c) Social Presence × Product Type

(d) Sensory Appeal × Product Type



***p<.001, *p<.05, †p<.1

Figure 3

Simple slope analysis

H6b suggested that entertainment would have a greater impact on CBI for experience goods compared to search goods. The interaction term between entertainment and product type was significant (β = .19, t = 3.30, p < .01, f^2 = .037) (see Table 3). As shown in Figure 3b, entertainment positively influenced CBI in both groups, with a stronger effect for experience goods (β = .57, t = 7.02,

$p < .001$) than for search goods ($\beta = .20$, $t = 2.06$, $p < .05$), supporting H6b.

H6c predicted that the influence of social presence on CBI would be stronger for experience goods. The interaction term (social presence × product type) was significant ($\beta = .22$, $t = 3.82$, $p < .001$, $f^2 = .049$) (see Table 3). As illustrated in Figure 3c, social presence had a positive effect in both conditions, but was more pronounced for experience goods ($\beta = .63$, $t = 8.24$, $p < .001$) than for search goods ($\beta = .19$, $t = 1.94$, $p < .10$), providing support for H6c.

H6d proposed that sensory appeal would exert a stronger effect on CBI for experience goods compared to search goods. The interaction term between sensory appeal and product type was statistically significant ($\beta = .14$, $t = 2.46$, $p < .001$, $f^2 = .021$) (see Table 3), indicating a moderating effect. As shown in Figure 3d, sensory appeal had a significant positive impact on CBI for both product types. Specifically, the effect was stronger for experience goods ($\beta = .64$, $t = 7.21$, $p < .001$) than for search goods ($\beta = .35$, $t = 3.83$, $p < .001$), confirming H6d and suggesting that sensory-related stimuli are more influential in shaping identification with experience goods than with search goods.

5.4 Mediation effect test

To examine the mediating role of CBI, we applied Hayes' (2017) PROCESS macro (Model 4) with 5,000 bootstrap resamples. This method was chosen for its suitability to the study's objectives and data characteristics. Since the analysis involves observed variables with well-validated scales, and the model structure is relatively simple, the added complexity of SEM was not necessary. Moreover, PROCESS is more robust under moderate sample sizes and does not require multivariate normality, making it appropriate for cross-sectional survey data (Hayes, 2017). This approach has been widely applied in top-tier international journals for mediation analysis due to its clarity and statistical rigor.

The results revealed that informativeness exerted a significant indirect effect on brand loyalty through CBI (indirect effect = 0.11, 90% bootstrap CI [0.02, 0.22]), with a standardized indirect effect of 0.08, indicating a modest but meaningful mediating pathway. In contrast, the indirect effect of entertainment

on brand loyalty via CBI was not statistically significant (indirect effect = -0.05, 90% bootstrap CI [-0.17, 0.07]), and the standardized effect was also small (β = -0.04), suggesting that entertainment-oriented experiences did not meaningfully enhance brand loyalty through identification mechanisms.

Social presence showed a statistically significant mediating effect through CBI (indirect effect = 0.15, 95% bootstrap CI [0.03, 0.27]), with the largest standardized indirect effect among all four experience dimensions (β = 0.12), underscoring the pivotal role of perceived interpersonal cues in fostering brand-related identification and loyalty. Similarly, sensory appeal also demonstrated a significant indirect effect via CBI (indirect effect = 0.10, 90% bootstrap CI [0.01, 0.18]), with a standardized effect size of 0.08, indicating that sensory-rich online experiences can enhance brand loyalty through strengthened CBI.

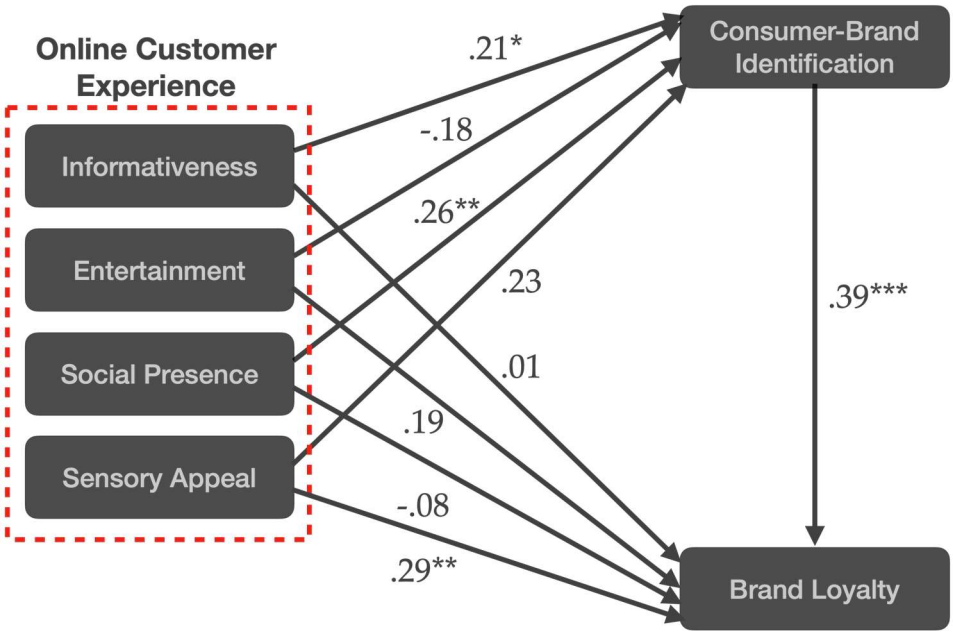
5.5 A rival model

To further examine the robustness of our hypothesized model, we conducted a comparative analysis against a rival model. Specifically, we compared the proposed partial mediation model with a full model that additionally incorporated direct paths from the four experiential dimensions (informativeness, entertainment, social presence, and sensory appeal) to brand loyalty (see Figure 4).

Following the comparative standards of De Wulf et al. (2001), we evaluated model adequacy based on both overall model fit and the proportion of significant path coefficients. The rival model exhibited an acceptable level of fit ($\chi^2(236) = 861.65$, $\chi^2/df = 3.65$, CFI = .93, TLI = .91, RMSEA = .09, SRMR = .05). Moreover, the chi-square difference test confirmed that the two models did not differ significantly in terms of overall model fit ($\Delta\chi^2 = 4.62$, $\Delta df = 4$, $p = .33$), indicating that there was no statistically significant difference between the hypothesized and competing models.

In addition to model fit, the hypothesized model demonstrated a higher proportion of significant path coefficients, with 80% of the paths reaching

statistical significance (four out of five). In contrast, the rival model yielded only 44.44% (four out of nine). These results suggest that testing a rival model further reinforces the meaningfulness and robustness of the hypothesized model.



*p<.05, **p<.01.

Figure 4
Results of the rival model

6 Conclusion

6.1 Study findings

This study explored how informativeness, entertainment, social presence, and sensory appeal affect CBI, and whether these effects vary across product types (search goods vs. experience goods). The findings show that informativeness, social presence, and sensory appeal all strengthen CBI, whereas entertainment does not exert a significant influence. Importantly, product type

moderated all four relationships, with effects consistently stronger for experience goods than for search goods. These results highlight the importance of contextualizing online customer experience strategies according to the characteristics of the product being marketed.

The significant positive relationship between informativeness and CBI aligns with prior studies emphasizing the value of cognitive content in helping consumers evaluate brand relevance and reduce uncertainty (Bleier et al., 2019; Verhoef et al., 2009). Informative websites enhance consumers' perceptions of brand transparency and credibility, which in turn fosters psychological attachment. Similarly, the effect of social presence on CBI supports findings from Gefen and Straub (2003) and Hassanein and Head (2007), suggesting that perceived human warmth and interpersonal cues in online interfaces strengthen users' sense of connection with brands. The positive influence of sensory appeal echoes the assertions of Schmitt (1999) and Gentile et al. (2007), who argue that multisensory stimuli, even within the constraints of digital environments, can evoke emotional responses and symbolic associations that contribute to brand identification.

In terms of product type, the results support the proposition by Bleier et al. (2019) and Weathers et al. (2007) that consumers rely more heavily on experiential cues when evaluating experience goods, which are inherently more difficult to assess prior to purchase. The moderating effects found in this study further suggest that online experience design should be tailored to the product category: while search goods benefit from clear and objective information, experience goods require more immersive, emotionally rich, and socially engaging content to foster brand attachment.

Interestingly, this study found that entertainment did not significantly affect CBI, a result that contrasts with prior studies (e.g., Childers et al., 2001; Mathwick et al., 2001), emphasizing the role of entertainment in fostering consumer engagement in digital environments. One plausible explanation lies in entertainment itself: while it tends to evoke short-term hedonic responses and emotional enjoyment, these responses may lack the symbolic and

identity-relevant depth required to foster strong identification with a brand (Temitope et al., 2024).

This effect may be particularly pronounced in the context of high-involvement and functionally oriented products such as smartphones. When engaging with these types of products, consumers tend to concentrate more on utilitarian content, such as detailed product specifications, functional comparisons, and peer-generated reviews, instead of entertainment-related features. Supporting this view, Dastan and Geçti (2014) found that in the smartphone industry, utilitarian value positively influences brand trust, whereas hedonic value does not significantly contribute to it. As such, entertainment stimuli appear to play only a peripheral role in shaping deeper psychological constructs like brand identification. Its influence is likely to be more prominent during the early stages of the customer journey, such as initial brand exposure or attitude formation (Lemon and Verhoef, 2016). However, this effect may diminish once consumers shift their focus toward goal-directed decision-making and the reinforcement of long-term brand identification (Bettman et al., 1998; Petty and Cacioppo, 1986).

Moreover, this pattern reflects the broader distinction between hedonic and utilitarian brand experiences. Although the Apple brand carries symbolic meaning (Belk and Tumbat, 2005), its online environments, including product pages and purchase interfaces, are often perceived as primarily instrumental and focused on task completion (Hoffman and Novak, 1996). For many users who are already familiar with Apple's ecosystem, brand engagement may center more on efficiency and functionality than on novelty or playfulness. As consumers move into more goal-directed processing, they increasingly rely on diagnostic information, which can attenuate the influence of peripheral, entertainment-oriented cues (Bettman et al., 1998). Consequently, the capacity of such elements to enhance brand identification may become significantly limited in this context.

6.2 Theoretical contributions

This study offers several key theoretical contributions to the literature on customer experience, CBI, and digital marketing. First, it addresses calls for more empirical research on the multidimensionality of online customer experience (Bleier et al., 2019; Keiningham et al., 2017). Adopting a four-dimensional framework comprising informativeness, entertainment, social presence, and sensory appeal, this study moves beyond prior unidimensional approaches (e.g., Foroudi et al., 2016; Klaus and Maklan, 2013) and provides a more comprehensive view of how experiential elements function in digital contexts.

Second, the study extends CBI research by showing that online experience cues, particularly informativeness, social presence, and sensory appeal, can serve as symbolic and affective signals that foster brand identification. This broadens existing theories, which have primarily focused on brand attributes or CSR (e.g., Currás-Pérez et al., 2009; He and Li, 2011; Stokburger-Sauer et al., 2012), by integrating insights from social identity theory (Tajfel and Turner, 1979).

Third, product type moderates the relationship between customer experience and CBI, with stronger effects observed for experience goods. This suggests that when evaluation is difficult, consumers rely more on symbolic and emotional cues (Bleier et al., 2019), deepening contextual insights into customer experience theory.

Finally, the study clarifies the limits of entertainment in identity formation. Although often linked to engagement (Childers et al., 2001; Mathwick et al., 2001), entertainment did not significantly affect CBI, suggesting that hedonic value alone may be insufficient for fostering identity-based outcomes. This calls for greater theoretical differentiation among experiential cues.

6.3 Managerial implications

This study provides several practical implications for brand managers and digital marketing strategists. The findings indicate that key dimensions of online

customer experience, particularly informativeness, sensory appeal, and social presence, significantly enhance customer-brand identification. Moreover, the moderation analysis revealed that all four experiential dimensions exert stronger effects for experience goods than for search goods, indicating that the effectiveness of experiential design depends on product type. To support implementation, a visual summary of recommended experience design strategies by product type is presented in Table 3. This summary consolidates the key experiential components identified in this study and organizes them into a practical framework that brand managers can use to tailor digital touchpoints based on whether they offer search or experience goods. The strategies are drawn from both the study's empirical findings and widely accepted practices in digital marketing.

Table 3

Experience design playbook by product type

Experience dimension	Key strategies	
	Search goods	Experience goods
Informativeness	■ Transparent product info ■ Comparison tables ■ FAQs and tutorials ■ Instructional videos	■ Lifestyle-based content ■ Real-life usage stories ■ Contextual demos and use-case scenarios
Entertainment	■ Clean, interactive UI ■ Light gamification ■ Engaging micro-animations	■ Emotional storytelling ■ Immersive content (360° views, video tours)
Sensory appeal	■ High-quality visuals ■ AR try-on tools ■ Simple animations	■ Dynamic videos ■ Simulated environments (e.g., VR) ■ Ambient motion/sound cues

Social presence	■ Chatbots and FAQ agents ■ User reviews and testimonials ■ Peer interaction tools	■ Live chat with brand reps ■ Real-time customer stories ■ Brand community engagement tools

Note. Some strategies are empirically derived from the study; others are inferred from the underlying logic and current digital marketing practices to aid implementation.

For experience goods, consumers often face difficulty evaluating product quality prior to purchase (Nelson, 1970). As a result, they rely more on symbolic meanings and emotional connections conveyed through online experiences (Eroglu et al., 2003; Escalas and Bettman, 2005). To reduce perceived uncertainty and reinforce brand identification, firms should adopt emotion-oriented experiential design strategies. Specifically, immersive visual (e.g., 360-degree product displays, dynamic video tours), context-rich content (e.g., user stories, lifestyle simulations, and real-time interactive features (e.g., live reviews, online chat support) can all contribute to enhancing sensory appeal and social presence. These design elements help trigger self-extension and symbolic alignment with the brand.

For search goods, which can typically be evaluated prior to purchase, consumer decision-making is more strongly guided by rational analysis (Nelson, 1970). However, this study shows that informativeness, entertainment, sensory appeal, and social presence also enhance brand identification in this context, though to a lesser degree. Firms should therefore design digital experiences that incorporate these experiential components. Effective practices include providing transparent product information and decision support tools, such as product comparison tables, third-party review summaries, FAQs, and instructional videos, to meet information-based needs. In addition, incorporating user feedback, customer testimonials, and interactive tools like chatbots can improve social presence and customer engagement, further reinforcing brand identification.

It is also advisable for firms to adopt a customer journey-based approach to digital experience management in order to develop a more systematic and

integrated experiential strategy (Homburg et al., 2017; Lemon and Verhoef, 2016; Rosenbaum et al., 2017). Tools such as customer journey mapping and digital touchpoint orchestration allow firms to track changes in consumer behavior and psychological needs across various stages of the journey, such as awareness, evaluation, purchase, and post-purchase. These insights can then guide the design of targeted experiential modules and feature configurations tailored to product type and consumer involvement. As noted by Deloitte Digital (2024), effective digital touchpoint management enables firms to connect diverse interaction contexts, optimize the quality of brand–customer interactions, and enhance value delivery.

From an operational perspective, firms can implement stage-specific experiential strategies aligned with key milestones in the customer journey. In the awareness stage, emphasis should be placed on informativeness and professional content; in the evaluation stage, mechanisms for social interaction and real-time feedback can be introduced. The purchase stage benefits from immersive visuals and contextual cues, while the post-purchase stage is suggested to focus on maintaining relationships through social presence and brand community engagement. Aligning experiential dimensions, such as information delivery, sensory design, and community interaction, with different stages of the decision process enables firms to construct a coherent blueprint for experience design. This approach contributes to strengthening brand recognition and customer loyalty in digital environments, ultimately fostering more stable and enduring brand–customer relationships.

6.4 Limitations and future research

Despite its contributions, this study has several limitations that suggest directions for future research. First, the sample consisted exclusively of Apple iPhone users in Taiwan, which may restrict the generalizability of the findings. The choice of Apple users is contextually appropriate given the brand's symbolic identity, closed operating ecosystem, and loyal customer base (Demar et al., 2022; Lam et al., 2010). However, these characteristics may also constrain

applicability to less identity-driven brands, where the psychological mechanisms underlying CBI formation through online experiences could differ. Future studies are therefore encouraged to include users of alternative smartphone brands such as Samsung, Google, or Xiaomi, and extend the analysis to other product categories. Such efforts would enhance the external validity of the findings and allow comparisons of how brand-specific attributes influence the relationship between online customer experience and CBI.

Second, as this study relies on cross-sectional self-reports, causal inference is limited. While SEM and moderation analyses can assess covariation among constructs, they cannot establish temporal precedence, rule out reverse causality, or fully address omitted-variable bias. Accordingly, the reported relationships should be interpreted as associative rather than causal. Future work should employ longitudinal designs (e.g., cross-lagged or latent growth models) or experimental/quasi-experimental approaches to test how experience exposure over time influences brand identification and loyalty. Integrating behavioral data (e.g., clickstream records, purchase histories, or interaction logs) would also complement self-reports and strengthen the validity of the findings.

Third, this study examined four key experience dimensions adapted from Bleier et al. (2019), namely informativeness, entertainment, social presence, and sensory appeal. While these dimensions capture core aspects of online customer experience, they do not encompass the full experiential spectrum proposed in prior research. For instance, Rose et al. (2011) categorized online customer experience into cognitive and affective states that also include factors such as perceived control, personalization, and trust. Similarly, Verleye (2015) identified six types of experience, hedonic, cognitive, social, personal, pragmatic, and economic, which highlight the complexity and richness of customer experiences in co-creation contexts. Based on these frameworks, future research could extend the current model by incorporating additional elements such as personalization, perceived control, and community involvement, thereby providing a more comprehensive account of how digital interactions shape brand perceptions.

Another limitation concerns the research context. The findings suggest that

the effect of entertainment on brand identification may be context-dependent. Although entertainment can enhance emotional engagement and parasocial interaction (Hollebeek et al., 2014; Labrecque, 2014; Tukachinsky et al., 2020), its influence may be limited in utilitarian settings. In the present study, which focused on Apple's website, entertainment elements may not have been sufficiently salient to override consumers' primarily task-oriented motivations. While the Apple brand holds symbolic meaning (Belk and Tumbat, 2005), its online environments, such as product pages and purchasing interfaces, are generally perceived as functional and efficiency-driven (Hoffman and Novak, 1996). As a result, the emotional impact typically associated with entertainment cues may have been diminished. Future research could further explore these contextual boundaries by comparing brands that vary in symbolic emphasis or by investigating how entertainment operates in hedonic or identity-expressive product categories.

Finally, although this study distinguished between search and experience goods, it did not consider credence goods (e.g., legal or medical services), which are characterized by high levels of information asymmetry and trust dependence. Future research could examine how customer experience dimensions operate in contexts where product quality remains difficult to evaluate even after consumption. This study relied on respondents' subjective classification of the focal product (a smartphone) as a search or experience good. While this perception-based approach recognizes individual differences in product categorization, future work could employ expert evaluations, objective product typologies, or experimental manipulation to more rigorously distinguish product types and enhance the validity of such comparisons.

In summary, future research would benefit from adopting a broader methodological and contextual scope. This includes integrating behavioral data with self-reports, employing longitudinal or experimental designs to enhance causal inference, and examining how online customer experience functions across different market segments and brand categories. These directions will help advance a more nuanced and generalizable understanding of CBI in digital

environments.

Appendix 1: Results of confirmatory factor analysis

Construct	Items	Factor loading	t-value
Informativeness	1. Information from the website is useful.	.89	57.85
	2. I can learn a lot from the website.	.87	49.48
	3. I think the information acquired from the website is very helpful.	.91	65.89
Entertainment	1. The website is interesting.	.91	76.98
	2. The website is pleasing.	.95	104.26
	3. The website is extremely entertaining.	.88	55.33
Social presence	1. I feel connected to others via the website.	.77	29.26
	2. I feel the warmth from the connection to others via the website.	.96	93.29
	3. I feel the sensitivity from the connection to others via the website.	.90	68.62
Sensory appeal	1. The introduction of products on the website is vivid.	.83	37.45
	2. I can obtain product information with different senses.	.81	33.87
	3. The website provides thrilling product information.	.86	43.67
CBI	1. If Apple is criticized, it feels like a personal insult to me.	.91	79.98
	2. The success of Apple feels like my personal achievement.	.94	118.30
	3. If Apple is praised, it feels like a personal compliment for me.	.95	138.08
	4. If criticism of Apple appears in the media, I feel embarrassed and upset.	.90	76.55
	5. I have a strong sense of belongingness towards	.88	61.24

	Apple.		
	6. I agree with whatever it is about Apple.	.85	51.07
	7. Apple is like a piece of me.	.89	68.34
	8. Apple means a lot to me.	.88	60.51
Brand loyalty	1. I prefer Apple to other brands even though they may provide the same product/service.	.92	83.02
	2. Even though being offered the same product/service by other brands, I'd rather choose Apple.	.95	111.22
	3. Even though the product/service of Apple costs more than other brands, I am willing to accept it.	.91	74.86
	4. If needed in the future, the product/service of Apple will be my choice.	.86	49.58
Product types	1. I can obtain information about the functions of a certain product to make an overall evaluation of it on the website.	.78	25.47
	2. I can evaluate the quality of a certain product by reading information related to it.	.84	31.50
	3. I consider it extremely necessary to touch a certain product to evaluate its functions.	.78	24.14
	4. I consider it extremely necessary to experience a certain product to evaluate its functions.	.77	23.16
$\chi 2(329)=1104.97$, $\chi 2/d.f.=3.36$, CFI=.92, TLI=.90, RMSEA=.08, SRMR=.05.			

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