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Beyond the gimmick: How affective responses drive brand attitudes and intentions in augmented reality marketing

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Abstract

According to recent research in augmented reality (AR) marketing, AR-based product presentations have the potential to create extraordinary shopping experiences across the customer journey. However, the mechanisms that drive key marketing metrics, such as brand evaluations or purchase intentions, are yet to be thoroughly understood. Drawing on the Affect-as-Information Theory, this study placed affective responses, such as customers' enjoyment and inspiration, at the center of decision-making and conducted two online experiments to empirically investigate (1) the differences in the intensity of affective responses between AR and non-AR, (2) the interplay between affective and cognitive responses in shaping behavioral outcomes, and (3) the moderating role of customer-specific factors (customers' AR familiarity and product knowledge) on affective responses. According to the results, although the affective responses increase purchase and word-of-mouth intentions directly as well as indirectly through product/brand attitudes, AR does not per se guarantee more positive affective responses; rather, they depend on the technical implementation of AR features and customers' AR expertise, among others.

KEYWORDS

AR marketing, augmented reality, brand attitude, branding, enjoyment, inspiration, purchase intention, word-of-mouth

1 | INTRODUCTION

Many retailers, such as Amazon.com, essie, and IKEA, have integrated augmented reality (AR) features into their digital shopping environments, allowing consumers to see the virtual representations of their products in the real world (Rauschnabel et al., 2022). For example, consumers can place a virtual lamp in their homes or display virtual colors on their fingernails. AR-based product presentations thus substantially extend traditional online product presentation formats that use pictures, videos, three-dimensional views, or text-based product descriptions. Unsurprisingly, industry research has revealed

that consumers are highly interested in AR apps. For example, as of today, 61% of global Internet users have a keen interest in using AR in the future for online purchases (Statista, 2021). According to market forecasts, AR will play a highly dominant role in consumers' lives in general and, consequently, in future marketing practices (Singh, 2019). Thus, investigating consumers' decision-making in an AR context has never been more salient and pressing (Qin et al., 2021; Rauschnabel et al., 2022).

In recent years, research has focused on understanding the drivers, mechanisms, and consequences of AR Marketing apps (for recent reviews of the literature, see Kumar, 2021; Rejeb et al., 2021). In

particular, academics have emphasized AR's potential to create outstanding and inspirational experiences for users across the customer journey (Heller et al., 2019b; Hilken et al., 2018, 2021; Javornik et al., 2021; Rauschnabel et al., 2022). Consumers generally find AR features to be entertaining (Hilken et al., 2018), inspirational (Hinsch et al., 2020), and helpful (Hilken et al., 2017), leading to positive app evaluations (Rese et al., 2014), positive purchase intentions (Beck & Crié, 2018; Gatter et al., 2021; Hilken et al., 2017), higher willingness to pay (Heller et al., 2019b), and higher brand perceptions (Javornik, 2016; Rauschnabel et al., 2019). However, as recently outlined by Kumar (2021), a better understanding of the experiential value of AR is still lacking. Marketing researchers and practitioners still face a crucial question: To what extent do affective responses to this presentation format influence users' cognitive responses and behaviors?

The extant research that compared AR- and non-AR-based product presentations has mostly examined affective responses (hedonic factors) at the same level as utilitarian aspects, indicating that the former can compensate for a lack in the latter, and vice versa (Hilken et al., 2017; Rauschnabel et al., 2019). The findings from the Affect-as-Information Theory can complement these results. More specifically, the Affect-as-Information Theory states that consumers use affect as an essential source in their decision-making processes, such that their general feelings drive their cognitive evaluations as well as their behaviors (Chang & Pham, 2013; Pham, 1998; Pham et al., 2013; Schwarz & Clore, 2007). The AR app by essie (which allows users to put virtual nail polish on their hands) may serve as an illustrative example. An essie app user might be excited to see a fitting nail polish on their hands. In this case, the feeling is integral to the judgment and, thus, is a valid indicator of product value. However, according to Schwarz (2012), although feelings are not always valid information, they can still substantially influence object evaluation. If an evoked feeling is due to an incidental influence, it could be misleading. Besides influencing product evaluations, the AR app might be fun to use and/or "gimmicky" and, thus, create excitement. In the latter case, the feeling is incidental. A user might mistake their excitement to be stemming from the nail polish, which can positively influence not only the evaluation of essie products but also the essie brand. Unless peoples' attention is explicitly drawn to the incidental source of their respective feelings, Schwarz (2012) and Schwarz and Clore (2007) highlighted, the incidental influence of feelings will always occur.

In line with the Affect-as-Information Theory, several researchers have recently emphasized the importance of affective responses in the context of AR and virtual reality (VR). van Berlo et al. (2021), for example, suggested that people will potentially attribute their excitement to the stimulus brand that launched a VR app. Wang et al. (2020, p. 1) argued that people use emotions to make "colored" judgments that influence their attitudes and behaviors. Pozharliev et al. (2021) investigated the intensity of emotional responses in the AR context and found that AR advertisements may enhance users' physiological responses (in the form of arousal) as well as influence their willingness to pay.

In this study, we argue that affective response is particularly influential since it is a key driver or facilitator of inspiration, which has been shown to affect evaluations of AR experiences (Rauschnabel et al., 2019). According to Thrash et al. (2014), whether inspiration itself is an emotion remains an open debate. Since the boundaries of the emotion concept are disputed, some theorists may see reason to subsume inspiration within the field of affective responses. However, we argue that inspiration is often based on and involves several possible elicitor-focused emotions. In other words, the process of being "inspired-by" resembles the elicitation of a discrete emotion, such as enjoyment of the AR experience, whereas the process of being "inspired-to" resembles an intentional component (Böttger et al., 2017). We focus on the "inspired-by" stage and treated inspiration as an affective response.

Therefore, our study seeks to account for the crucial role of affect in evaluating AR experiences. More specifically, following the Affect-as-Information Theory, we argue that even though the affective responses evoked by different product presentation formats might differ, cognitive and behavioral processes subsequently and strongly depend on the level of affective responses evoked. By drawing on the Affect-as-Information Theory and prior research on AR, we propose a theoretical framework that explains how AR (vs. non-AR) drives affective responses (including the "inspired-by" component of inspiration) that then influence cognitive responses and managerially relevant behavioral outcomes. Incorporating insights from prior research on AR-related influencing factors of affective responses (e.g., Heller et al., 2019a; Hinsch et al., 2020; Rauschnabel et al., 2019), the model also theorizes that the strength of the proposed effect of AR on affective responses differs between consumers with varying levels of familiarity with AR and product knowledge. We test the model in two studies using different AR environments and products.

Our study contributes to the literature in multiple ways. First, we bring the Affect-as-Information Theory to the attention of AR marketing research. Second, our empirical findings suggest that enjoyment, as an initial affective response, is important since it drives inspiration (and downstream behavioral consequences). Third, we show that AR does not always enhance users' affective responses. More precisely, in Study 2, where we apply a fingernail app, we show that consumers in the AR group experienced less enjoyment (most likely because of their inconvenient handling of the app) than those in the non-AR group. This finding complements prior research (e.g., Barhorst et al., 2021; Kowalczuk et al., 2021; Yim et al., 2017) with a call to both scholars and managers not to generalize AR as a feature that is always better. Fourth, Study 2 investigates whether AR familiarity and product knowledge are important moderators of the affective response to AR-based product presentations — insights that are particularly relevant to target consumers new to AR or new to a product category.

The rest of this article is organized as follows. In the next section, we review the AR marketing literature, introduce the Affect-as-Information Theory as a theoretical basis, and develop our theoretical model. Section 3 outlines the design of our two empirical studies,

data collection, and results. The article concludes with a general discussion of the findings and their implications for future research and practice.

2 | THEORETICAL FOUNDATIONS AND MODEL DEVELOPMENT

2.1 | Responses to AR-based product presentations

Several researchers have explored how consumers engage with AR shopping apps. Scholz and Duffy (2018), for example, offered qualitative insights into how consumers engage with an AR shopping app to express themselves, and Jessen et al. (2020) examined how AR enables consumer creativity. Several empirical studies have applied experimental between-subjects designs and randomly assigned participants to an AR and a non-AR group. As a general conclusion, these studies showed that AR-based product presentations trigger more positive responses — affective, cognitive, or behavioral — than other forms of product presentations (Barhorst et al., 2021; Javornik, 2016; Jiang & Benbasat, 2007; Kowalczuk et al., 2021; Smink et al., 2020; Vonkeman et al., 2017; Yang et al., 2020; Yim et al., 2017). Kumar (2021) summarized the extant AR research in a conceptual framework, arguing that the link between AR and outcomes is mediated by the value consumers experience (positive) and risk factors, such as privacy concerns (negative).

The common approach of the extant studies was to treat the affective or hedonic as well as cognitive or utilitarian constructs as mediators at the same conceptual level between the used medium (e.g., AR vs. an alternative) and the behavioral outcome (e.g., Kumar, 2021; Lavoye et al., 2021). In other words, if two users experience the same app differently — that is, user 1 has a positive affective response (enjoys using the app), and user 2 has a positive cognitive response (thinks about which features of a product are best) — both might evaluate the experience equally well. As introduced in the next section in more detail, we argue that the Affect-as-Information Theory can extend these models by assessing the interplay between affective and cognitive factors and, by doing so, respond to the need to understand the psychological mechanisms that translate AR experiences into purchase or word-of-mouth (WOM) intentions (Kumar, 2021). Enjoyment and inspiration, in particular, likely play an important role in decision-making (Böttger et al., 2017). To our knowledge, only Holdack et al. (2020) explicitly investigated the mediating role of cognitive responses in this context, tracing the effect of enjoyment on reuse intention back to users' attitudes toward the product's presentation format. Additional research results drew a similar picture in that affective responses appear to stimulate cognitive responses which, in turn, influence behavioral outcomes (e.g., Gatter et al., 2021; Kim & Forsythe, 2008; Pantano et al., 2017; Qin et al., 2021; Rese et al., 2014; Yim et al., 2017).

The subsequent sections summarize the most important prior empirical findings regarding the relationship between affective, cognitive, and behavioral responses. Table SA1 in the Appendix provides an overview.

2.1.1 | Impact of affective responses on behavioral responses in AR

Several studies have shown that the entertainment value of AR-based product presentations goes beyond that of other product presentation formats (Barhorst et al., 2021; Kowalczuk et al., 2021; Yim et al., 2017). Although the probability of purchasing a product is likely higher if users enjoy their online shopping experience, only a few studies have explicitly focused on the interplay between affective responses and behavior (Hilken et al., 2017; Kowalczuk et al., 2021; Smink et al., 2020; Vonkeman et al., 2017). For instance, in two laboratory experiments, Hilken et al. (2017) showed that, in the case of makeup and sunglasses, enjoyment significantly increases purchase intention and WOM. In a similar vein, Kowalczuk et al. (2021) found that enjoyment stimulates the reuse intentions of the IKEA app. Beyond that, users tend to buy more impulsively if the presented product itself makes them feel excited and inspired (Vonkeman et al., 2017). Smink et al. (2020) demonstrated that negative emotions also affect behavior. Product presentation formats that are too intrusive substantially reduce purchase intentions and WOM.

2.1.2 | Impact of cognitive responses on behavioral responses in AR

To date, the interplay between cognitive and behavioral responses has been of more interest to research than that between affective and behavioral responses. Research has shown that users with a positive attitude toward (using) the product presentation format have higher purchase intentions (Yim et al., 2017) and reuse or return intention (e.g., Daassi & Debbabi, 2021; Holdack et al., 2020; Jiang & Benbasat, 2007; Kim & Forsythe, 2008; Kowalczuk et al., 2021; Pantano et al., 2017; Qin et al., 2021; Rese et al., 2014). In addition, purchase intention and WOM yield higher values if users perceive the product presentation format as useful (Gatter et al., 2021; Hilken et al., 2017). Moreover, confidence or comfort with the decision increases purchase intention (Hilken et al., 2017; Kowalczuk et al., 2021), WOM (Heller et al., 2019a; Hilken et al., 2017), and willingness to pay (Heller et al., 2019b).

2.1.3 | Impact of affective responses on cognitive responses in AR

Prior research that investigated the interplay between affect and cognition has mostly focused on the effect of enjoyment as an

affective response on several cognitive responses. In general, research has shown that higher levels of enjoyment strengthen (1) the attitude toward the respective product presentation format (Barhorst et al., 2021; Gatter et al., 2021; Holdack et al., 2020; Rauschnabel et al., 2019; Yim et al., 2017), (2) the attitude toward using the format (Kim & Forsythe, 2008; Pantano et al., 2017; Qin et al., 2021), (3) the perceived usefulness of the format (Holdack et al., 2020; Rese et al., 2014), (4) changes in brand attitude (Rauschnabel et al., 2019), and (5) the anticipated satisfaction with one's own choice (Jessen et al., 2020). Negative feelings also seem to impair cognitive responses. Particularly, attitudes toward the product presentation format and the brand both decrease with increasing perceptions of intrusiveness (Smink et al., 2020).

2.2 | Affect-as-information theory

As outlined in the previous section, according to research, affect plays a central role in the AR context. The Affect-as-Information Theory explains the vital importance of affective states (Schwarz & Clore, 2003; Schwarz, 2012; Winkielman et al., 2003), positing that affect serves as an essential source of information for judgments and decision-making. More precisely, consumers tend to ask themselves how they feel about a certain aspect (e.g., product, brand, or advertisement) and derive their evaluation or decision from this perception (Pham, 1998; Schwarz & Clore, 2007). In line with social psychology, the Affect-as-Information Theory defines affect as a generic term subsuming affective states, such as moods and emotions, as well as bodily experiences (Bagozzi et al., 1999; Schwarz & Clore, 2007).

According to the Affect-as-Information Theory, consumers automatically integrate their affective states into their decision-making processes (Schwarz & Clore, 2003, 2007; Schwarz, 2012; Winkielman et al., 2003). Consumers attach more importance to their affective states (1) if the informational value is higher, (2) if the information appears more relevant for the specific judgment, and (3) if the alternative information is less accessible (Schwarz, 2012). For example, if an affective state can be clearly attributed to the target object, consumers spontaneously perceive the information conveyed by their feelings as more valuable and rely more heavily on it (Avnet et al., 2012; Pham et al., 2013). In this context, emotions (vs. general moods) tend to have the strongest impact because they are impulsively evoked by a referent (Schwarz & Clore, 2007).

Furthermore, previous studies have provided evidence of the factors driving the perceived relevance of (emotional) information. First, several researchers have demonstrated that consumers' reliance on emotions is stronger for decisions associated with hedonic/experiential motives than utilitarian/instrumental ones (Chang & Pham, 2013; Pham, 1998; Pham et al., 2013). Second, if they are deciding something for themselves, consumers disregard alternative, more objective information, counting more on emotional information instead (Chang & Pham, 2013; Hsee & Weber, 1997; Raghunathan & Pham, 1999). The opposite holds if decisions are made for others. Third, when consumers have rather little expertise in the respective

domain, emotional information is more strongly weighted (Ottati & Isbell, 1996; Sedikides, 1995). Finally, relying on one's affective states, since it does not demand high processing capacities, can simplify decision-making (Pham, 1998; Schwarz, 2012). Consequently, if consumers feel time pressure when making judgments, emotional information is given greater importance (Chang & Pham, 2013; Siemer & Reisenzein, 1998).

2.3 | Model development

Several academics have underlined the relevance of enjoyable customer experiences — whether it is in decision-making in general (e.g., Holbrook & Hirschman, 1982) or in an AR environment in particular (e.g., Gatter et al., 2021; Hilken et al., 2017; Kowalczuk et al., 2021; Rauschnabel et al., 2019). Hilken et al. (2017) demonstrated that enjoyment plays a central role in boosting behavioral intentions, concluding that enjoyment — along with utilitarian benefits — might "determine the holistic customer experience" (p. 900). On this occasion, we draw on Venkatesh's (2000, p. 351) conceptualization of enjoyment, defining it as the product-presentation-specific perception of enjoyment, leaving aside the potential economic consequences of this interaction.

Likewise, inspiring content is considered a significant driver of metrics — customer engagement, loyalty, and WOM intentions (Böttger et al., 2017) — and is classified as particularly relevant in the case of new technologies (e.g., Böttger et al., 2017; Hinsch et al., 2020; Rauschnabel et al., 2019). Recently, Rauschnabel et al. (2022) positioned inspiration (besides branding, convincing and keeping) as a core objective in AR Marketing. The concept of customer inspiration has been subject to multiple academic inquiries over the past decades across multiple disciplines. We follow Böttger et al.'s (2017, p. 129) conceptualization that treats inspiration as a process consisting of two factors: "inspired-by" and "inspired-to." In our context, the intrinsic pursuit of a consumption-related goal ("inspired-to") is represented by purchase intentions or a person's willingness to recommend a product or brand to others (WOM). On the affective side, however, is the transitional aspect: the "inspired-by" dimension (Thrash et al., 2014). Building on prior research (e.g., Böttger et al., 2017; Thrash & Elliot, 2003; Thrash et al., 2010; Thrash et al., 2014), we treat "inspired-by" as an affective response, which generally feels good, to a marketing stimulus. As the "inspired-to" dimension is captured in behavioral responses, we focus on the "inspired-by" dimension. For simplicity, we refer to this dimension using the term "inspiration" in our framework. Accordingly, our framework focuses on two key affective responses — "enjoyment" and "inspiration" — and investigates their effect on product and brand attitude as well as behavioral outcomes.

Though highly relevant for marketers (Rauschnabel et al., 2022), the drivers and effects of attitude toward a respective product or brand (i.e., the cognitive product/brand assessment) are yet to be extensively studied in an AR context (Rauschnabel et al., 2019; Scholz & Duffy, 2018; Smink et al., 2020, Yang et al., 2020). Therefore, we

integrate product attitude (Study 1) and brand attitude (Study 2) as cognitive responses into our model. To extend the findings from the product level to the brand level, we use brand attitude in Study 2.

Being among the first to apply the reasonings of the Affect-as-Information Theory in the context of AR-based and non-AR-based product presentation formats, we focus on investigating behavioral intentions — mechanisms of the prepurchase stage according to Lemon and Verhoef (2016) — rather than real behavior. This, we argue, is a prerequisite for a thorough understanding of the complete customer journey and the interplay of the underlying decision-making processes. This focus on intentions is in line with prior research in the AR field (e.g., Hilken et al., 2017; Hilken et al., 2021; Kowalczuk et al., 2021). Regarding behavioral responses to different product presentation formats, purchase and WOM intentions are the most frequently studied outcomes (Heller et al., 2019a; Hilken et al., 2017; Kowalczuk et al., 2021; Smink et al., 2020; Yang et al., 2020; Yim et al., 2017) because they are the common key performance indicators for marketers. Furthermore, to provide more clarity on the question of whether users respond differently to AR-based product presentations, we investigate user-specific factors. More precisely, we include AR familiarity and product knowledge as moderators in Study 2. Figure 1 depicts our research framework and the corresponding hypotheses, which we explain in the following subsections.

2.3.1 | Drivers of affective responses to different online product presentation formats

According to the Affect-as-Information Theory, people tend to reflect on how they feel about a potential purchase during decision-making (Pham, 1998; Schwarz & Clore, 2007). Not only the product information but also the information about the medium (or, rather, the product presentation format) used to gather product information is also relevant. Thus, analogous to the postulate of Schwarz and Clore (2007), the product presentation itself may impulsively elicit emotions while someone is shopping. Following this reasoning, we argued that product presentation formats may differ in terms of the

intensity of the triggered emotions. This is in line with previous research indicating that online shoppers respond differently to the various product presentations employed by online shops (e.g., Jessen et al., 2020; Smink et al., 2020). Interactive product presentations tend to be more enjoyable and appealing than static pictures or videos. Previous research has shown that interactivity stimulates enjoyment (Kowalczuk et al., 2021; Qin et al., 2021). In a sense, the ability to interact with AR, which in virtual objects fades into users' immediate surroundings, may facilitate information processing and, in turn, influence enjoyment. Prior studies (Barhorst et al., 2021; Kowalczuk et al., 2021; Yim et al., 2017) have shown that product presentations with AR were enjoyed more than product presentations without AR (see literature review in Table SA1 in the Appendix).

However, based on previous findings from the literature, we also contend that creating enjoyment through AR features is not as straightforward as it may seem. The way AR features are implemented may strongly influence how much users enjoy using an app. At the same time, we expect that many companies intensively test AR features before implementing them in terms of usability criteria but potentially also regarding enjoyment. Thus, in line with previous empirical findings, we postulate the following:

> H1: *AR-based product presentations elicit a higher level of enjoyment than non-AR-based product presentations.*

While few studies (e.g., Hinsch et al., 2020; Rauschnabel et al., 2019) have recognized the importance of inspiration in AR marketing, the literature lacks experimental findings on whether AR triggers inspiration. Against this background, we hypothesize that AR can outperform other "standard" forms of product presentations (e.g., photos) in terms of inspiration. Böttger et al. (2017) mentioned new technologies as a source of inspiration, arguing that marketing triggers are inspirational when they provide new ideas to consumers and spur them to use their imagination. Product testers in AR, for example, provide new ideas to consumers and the possibility of playfully designing one's environment with virtual products. This assumption is in line with Jessen et al. (2020), who showed that AR
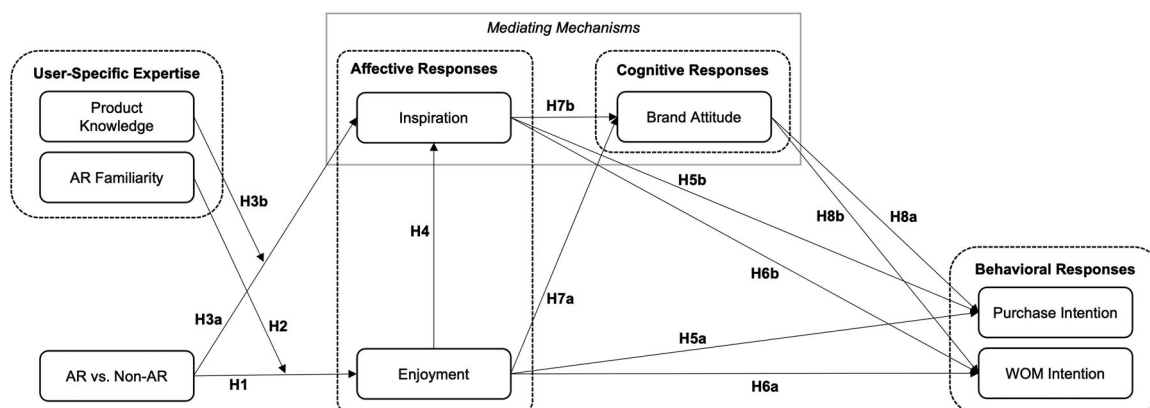

FIGURE 1 Research framework: How augmented reality marketing drives key metrics

triggers a form of creative customer engagement. Furthermore, we argue that realistic presentations of virtual products in the real world can reduce uncertainty and purchase risks (Hilken et al., 2017), both potential hurdles to engaging in creative imagination activities. Thus, we argue that AR can trigger inspiration.

> H2: *AR-based product presentations elicit a higher level of inspiration than non-AR-based product presentations.*

Drawing on the rationale of the Affect-as-Information Theory, we assume that user-specific factors further strengthen or hamper the effect of the product presentation format on (1) enjoyment and (2) inspiration. Depending on their past experiences with the product presentation format or product, users might attach more importance to their affective responses if they perceive the value conveyed by the respective product presentation format as even more informative (Schwarz, 2012).

Users' familiarity with AR might influence how much they enjoy the AR experience (Rauschnabel, 2021). In line with Schwarz and Clore (2007), we expect that users will use their prior knowledge about the AR experience as a source of information when evaluating a new AR experience. We postulate that users familiar with AR will compare their current feelings about the product presentation format with their past experiences. If these experiences match, their emotions toward the product presentation format are confirmed. Indeed, research has indicated that a format that users are familiar with is less cognitively demanding (Alba & Hutchinson, 1987; Schwarz, 2012). Consequently, users familiar with AR are likely to feel an even greater sense of enjoyment. In contrast, incongruent feelings about the product presentation format might lead to a decline in enjoyment because users "discount" their positive emotions. In this case, users, to some extent, eliminate their formerly positive feelings about AR. Schwarz and Clore (1983) and Schwarz (2012) reported that discounting effects exist in the Affect-as-Information Theory. Incongruency between feelings during past and current AR experiences might explain why users with AR expertise tend to be less curious about the product than non-experts (Yang et al., 2020). Therefore, we formulate the following:

> H3a: *The more familiar a user is with AR, the stronger is the effect of AR-based product presentations on their enjoyment.*

Analogous to H3a, we expect users' product knowledge to moderate the effect of the product presentation format on inspiration. In doing so, we follow Böttger et al.'s (2017) framework, which states that individual characteristics moderate the influence of certain source characteristics (here: AR vs. non-AR) on inspiration.

According to previous research, expertise in a particular domain serves as a necessary precondition for creativity (Csikszentmihalyi, 1997) to which inspiration can be attributed (Thrash et al., 2010). In other words, if people know a great deal about a product category, they might be less focused on gathering objective product

information and rely more on subjective information (i.e., how they feel about the product). Again, the emotions elicited by the product itself as well as the emotions elicited by the product presentation format serve as sources of information (Schwarz & Clore, 2007). In a sense, seeing how a product blends into one's own environment might facilitate inspirational thinking (Thrash & Elliot, 2003). The more expertise people have, the easier they move away from rational information processing, and the more they listen to their subjective feelings. Thus, in their evaluation of how they feel about the product presentation format, experts might value the interactive characteristics of AR (disproportionally) more than those who know less about the product. This reasoning may, at first glance, seem to contradict research in the context of the Affect-as-Information Theory, according to which people with rather limited expertise attribute more weight to emotional information than experienced people (Ottati & Isbell, 1996; Sedikides, 1995). Nevertheless, we must differentiate between product expertise as a driver of the strength of the perceived emotion and product expertise as a factor that reduces reliance on emotions during decision-making processes. Regarding the effect of users' product knowledge of the strength of emotions — the stage at which emotions occur — we expect that product experts will find AR-based product presentations even more inspiring than those who are less familiar with the product.

> H3b: *The more knowledgeable a user is about the product, the stronger is the effect of AR-based product presentations on their inspiration.*

Thrash and Elliot (2004) discussed and empirically tested the idea that positive emotions are an important antecedent of inspiration, describing inspiration as an appetitive state that involves activation and positive valence, and finding that inspiration involves elevated levels of activated positive affect. Moreover, inspiration narratives include more positive emotions and moderately less negative emotions. Rauschnabel et al. (2019) argued that inspiration increases when consumers perceive emotional gratification, such as when hedonic value is provided. In their empirical study, they found that the hedonic benefits created by an AR app significantly increased the level of inspiration users experienced, a finding that was replicated in Hinsch et al. (2020). In line with these findings, we argue that users' enjoyment of a product presentation (both AR- and non-AR-based) leads to inspiration:

> H4: *The greater the perceived enjoyment, the higher is the level of inspiration users experience.*

2.3.2 | Direct impact of affective responses on behavioral outcomes

Assuming that emotions are integrated into users' assessments (Schwarz & Clore, 2003, 2007; Schwarz, 2012; Winkielman et al., 2003) to facilitate and accelerate decision-making processes (Chang

& Pham, 2013; Pham, 1998; Schwarz, 2012; Siemer & Reisenzein, 1998), affective responses to product presentations may drive behavioral outcomes. In other words, the positive feelings that online shoppers experience when interacting with a product presentation might "spill over" to the product and, thereby, influence actual behavior. This assumption is in line with research findings that claimed that affective responses can directly affect behavioral intentions, such as purchase intentions (Elder & Krishna, 2012; Pham, 1998; Schwarz & Clore, 2007).

For example, if a user enjoys gathering information about products online, these favorable emotions might serve as a source of information, especially because they are highly accessible. Being somewhat aware that perceived emotions are elicited by the product presentation rather than by a random source, users might attach even more importance to the information conveyed by their sense of enjoyment (Avnet et al., 2012; Pham et al., 2013; Schwarz, 2012). As a result, they might feel a stronger desire to own the respective product and, in turn, are more willing to buy it. In addition, users who enjoy the entertaining side of shopping experiences might be more willing to tell others about their experiences. In examining these two assumptions, Hilken et al. (2017) provided evidence that, in the case of self-augmentation, enjoyment influences purchase intentions and WOM. In a similar vein, Yim et al. (2017) demonstrated that users' enjoyment of both AR- and non-AR-based product presentations indirectly affects their purchase intentions through an increased attitude toward the product presentation. Following this reasoning, we formulate the following:

> H5a: *The more enjoyable users perceive a product presentation to be, the higher is their purchase intention.*

> H6a: *The more enjoyable users perceive a product presentation to be, the higher is their WOM intention.*

Following the same line of argumentation, we expect inspiration to directly influence behavioral intentions. A key finding regarding inspiration is that inspired individuals strive for respective actions (Thrash & Elliot, 2003, 2004), and, as discussed previously, behavioral intentions are part of the "inspired-to" dimension (Böttger et al., 2017). For example, if a product presentation of a piece of furniture inspires online shoppers to also think about decorations, they will be more motivated to put these ideas into practice. Consequently, drawing on the Affect-as-Information Theory, we assume that being inspired entails direct responses that are not necessarily based on hard facts but on the positive, enthusiastic mood of online shoppers when inspired (Schwarz & Clore, 2003, 2007; Schwarz, 2012; Winkielman et al., 2003). In a similar vein, prior research has shown evidence that inspiration is positively linked to behavioral intentions, such as purchase intention and willingness to pay (Böttger et al., 2017; Figgins et al., 2016; Nikhashemi et al., 2021; Tang & Tsang, 2020). For example, regardless of the product category, inspiration can increase purchase intention (grocery product vs. vacation to Rome; Böttger et al., 2017). Furthermore, the positive

emotion of feeling inspired may spill over to the desire to spread WOM. Analogously, we postulate the following:

> H5b: *The more inspiring users perceive a product presentation to be, the higher is their purchase intention.*

> H6b: *The more inspiring users perceive a product presentation to be, the higher is their WOM intention.*

2.3.3 | Indirect impact of affective responses on behavioral outcomes through cognitive responses

Apart from the hypothesized direct effects of affective responses to product presentations on behavior, research has indicated that cognitive responses can serve as mediators (Elder & Krishna, 2012; Pham, 1998; Schwarz & Clore, 2007). Thus, emotions may enhance cognitive processing capabilities, which, in turn, drive behavioral intentions. We subsequently present the reasoning for both effects.

In a broader marketing context, research has shown that ad-evoked emotions substantially affect brand attitude (Brown et al., 1998; Burke & Edell, 1989; Clore et al., 2001; Fishbein & Middlestadt, 1995; Hasford et al., 2015; Pham, 2004; Pham et al., 2013). Likewise, in an AR marketing context, research has shown that this effect holds equally for AR- and non-AR-based product presentations (e.g., Smink et al., 2020). Alluding to the same reasoning, McLean and Wilson (2019) demonstrated that the degree to which AR is perceived to be enjoyable significantly increases brand attitudes. Drawing on the Affect-as-Information Theory, we argue that brand attitude is increased not exclusively by enjoyment but also by other affective responses. If users ask themselves how they feel about a respective brand, they might reflect on the emotions invoked by the product presentation (or, to some extent, even other emotion-evoking aspects; Clore et al., 2001; Pham, 2004). Then, depending on the related answer, they might derive their brand assessment. Consequently, this process is likely not limited to the affective response "enjoyment"; rather, both higher levels of enjoyment and inspiration should enhance brand attitude (Rauschnabel et al., 2019), regardless of whether it is evoked by an AR- or non-AR-based product presentation.

> H7a: *The more enjoyable users perceive a product presentation to be, the more positive is their attitude toward the respective brand.*

> H7b: *The more inspiring users perceive a product presentation to be, the more positive is their attitude toward the respective brand.*

Furthermore, as marketing research maintains, cognitive responses can influence purchase intentions (Elder & Krishna, 2012; Pham, 1998; Schwarz & Clore, 2007). Being (somewhat) consistent with these findings, we expect that an increased level of brand

attitude will positively affect behavioral outcomes. In particular, if users are positively inclined toward a brand, they might be more willing to purchase a brand-related product and recommend it to others. Therefore, we hypothesize that brand attitude enhances purchase and WOM intention.

> H8a: *The more positive the users' attitude toward the respective brand, the higher is their purchase intention.*

> H8b: *The more positive the users' attitude toward the respective brand, the higher is their WOM intention.*

3 | METHODOLOGY

To investigate the proposed hypotheses, we set up two studies to test different AR applications (Amazon and essie). Study 1 did not include the moderators (AR familiarity and product knowledge), and thus did not test H3a and H3b. Due to copyright reasons, the screenshots of the apps used are not included but are available upon request from the first author.

3.1 | Study 1: How AR marketing drives purchase intention

3.1.1 | Research design

We employed a two-group (AR- vs. non-AR-based product presentation) between-subjects design to investigate how presentation formats influence affective responses and, subsequently, cognitive and behavioral responses. Student interviewers approached the students of a German university in the foyer of a classroom building on campus in 2019. If the students agreed to participate, they were guided to a quiet area in the foyer to avoid distractions. We randomly assigned the participants to either the AR or non-AR condition. In both conditions, the participants used a tablet to look at the same floor lamp using the Amazon app. The Amazon app was used in Study 1 because it is a common and frequently used app. The same reasoning was applied for using the floor lamp as the product stimulus. Beyond that, we assumed that the participants would have neither too positive nor too negative opinions on floor lamps, which could potentially bias the results. Depending on the group assignment, the participants could either visualize the floor lamp in the foyer (treatment group: AR-based product presentation) or browse through the pictures that showed the lamp from different angles (control group: non-AR-based product presentation). The participants had as much time as they wanted to use the app and to look at the information available for the lamp (app inspection time for looking at the product information: AR (median) = 165 s, non-AR (median) = 152 s; time for answering the survey: AR (median) = 422 s, non-AR (median) = 369 s). Afterward, using a laptop, the participants answered questions concerning the corresponding constructs (see Table SA2), other unrelated variables, and demographics.

3.1.2 | Sample

We recruited 238 students (61% male; M_{age} = 23.75, SD = 4.47), assigning 118 of them to the treatment group (AR-based product presentation) and 120 to the control group (non-AR-based product presentation). Following prior AR research (e.g., Hilken et al., 2017; Rauschnabel, 2018), we used a sample of younger consumers who are typically more open to trying out new purchase environments and thus represent a realistic target group for online retailers. We checked whether the two sub-samples were significantly different in terms of socio-demographic characteristics and found no significant differences in age (AR = 24.16, non-AR = 23.34; t = 1.42, p = 0.16) and gender (percent male: AR = 63.3%, non-AR = 59.3%; χ^2 = 0.40, p = 0.53).

3.1.3 | Measures

As measurement instruments, we used previously validated constructs from the literature and adjusted them to the study context. All the constructs were measured on 7-point Likert scales (1 = "*strongly disagree*," 7 = "*strongly agree*"). We adopted the two-item scale from Chang and Wildt (1994) to measure purchase intention (e.g., "I would like to purchase the shown lamp"). We measured inspiration with a two-item ad hoc scale (e.g., "Looking at the lamp has given me new interior design ideas") that has similarities to Böttger et al. (2017) and Thrash et al. (2017). We adopted the three-item scale from Venkatesh and Bala (2008) to measure enjoyment (e.g., "Using this app brings me joy"). Table 1 shows the correlations between the latent constructs, and Table SA2 in the Appendix lists all the items.

A confirmatory factor analysis (CFA) in Mplus revealed a good model fit (comparative fit index (CFI) = 0.98; Tucker-Lewis index (TLI) = 0.97; root mean square error of approximation (RMSEA) = 0.09; standardized root mean square residual (SRMR) = 0.03; χ^2 = 60.2; df = 21). Inspection of each construct's local fit measures revealed average variance extracted (AVE), composite reliability (CR), and Cronbach's alpha values above the recommended thresholds of 0.5, 0.7, and 0.7, respectively. The established tests for common method bias and discriminant validity did not indicate any concerns.

TABLE 1 Correlations and descriptive statistics (Study 1)

		M	SD	1	2	3
1	Enjoyment	4.92	1.51			
2	Inspiration	2.52	1.64	0.35		
3	Purchase Intention	2.74	1.83	0.29	0.78	
4	Product Attitude	3.33	1.64	0.31	0.70	0.86

Note: Correlations of latent variables (Mplus, ML, CFA); all correlations are significant at the 1% level.
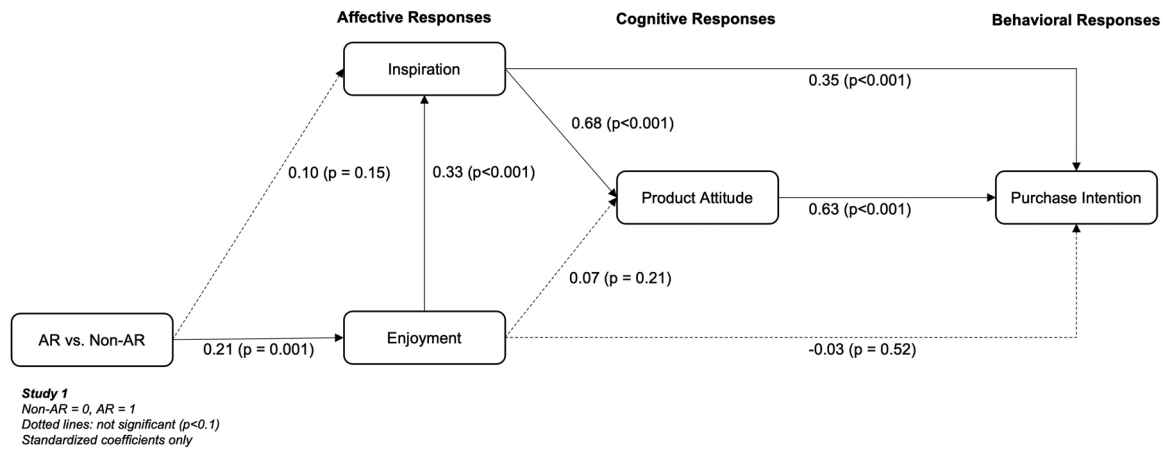
Abbreviation: CFA, confirmatory factor analysis.

FIGURE 2 Study 1: Augmented reality marketing's effect on purchase intention

3.1.4 | Results

Given the theory-testing nature of our research, we applied covariance-based SEM to test our proposed theoretical model in Mplus 8.5 (Muthén & Muthén, 2017). The overall fit of the proposed model based on the standard model fit indicators was excellent (CFI = 0.98; TLI = 0.97; RMSEA = 0.08; SRMR = 0.03; χ^2 = 65.8; df = 28). Figure 2 depicts the results.

The AR-based product presentation (vs. non-AR-based product presentation) was found to increase the perceived enjoyment of using the app (β = 0.21, p = 0.001), confirming H1. The direct effect of AR-based product presentations on inspiration was positive and in the proposed direction (β = 0.10) but not significant (p = 0.15); thus, H2 is not supported. The results, however, showed that inspiration increases if users enjoy using the app (β = 0.33, p < 0.001), indicating an indirect effect of AR (which we formally validated subsequently); thus, H4 is supported. Inspiration (β = 0.68, p < 0.001) but not enjoyment (β = 0.07, p = 0.21) drove product attitude, supporting H7b but not H7a. We also found positive effects of inspiration (β = 0.35, p < 0.001) and attitude toward the product (β = .63, p < 0.001) on purchase intention, confirming H5b and H8a; however, the hypothesized direct effect of enjoyment on purchase intention (H5a) is not supported (β = –0.03, p = 0.52).

3.1.5 | Mediation analyses: How AR marketing drives purchase intention

To better understand the process from AR to purchase intention, we assessed the indirect effects of AR on purchase intention using a bootstrapping procedure with 10,000 resamples (ML estimator). The total effect size was positive and significant ($\beta_{\text{sumindirect}}$ = 0.48). Because there are multiple paths to purchase, we inspected the specific indirect effects (Table 2).

In addition, because the effect of AR on inspiration did not reach significance, we further inspected the results. When eliminating the path from enjoyment to inspiration (i.e., mediation), the effect turned

TABLE 2 Indirect effects of augmented reality on purchase intention (Study 1)

Indirect effect	CI low	b	CI high
AR → Enjoyment → Purchase Intention	−0.09	−0.02	0.05
AR → Inspiration → Purchase Intention	−0.04	0.12	0.32
AR → Enjoyment → Inspiration → Purchase Intention	0.03	0.09	0.17
AR → Enjoyment → Product Attitude → Purchase Intention	−0.01	0.04	0.12
AR → Inspiration → Product Attitude → Purchase Intention	−0.05	0.15	0.36
AR → Enjoyment → Inspiration → Product Attitude →Purchase Intention	0.04	0.11	0.20

Note: Confidence intervals (CI) are the upper and lower 2.5%; unstandardized effects.

Abbreviations: AR, augmented reality; CI, confidence interval.

significant (β = 0.16, p = 0.01), indicating full mediation. To better understand this effect, we inspected the indirect effect of AR on inspiration through enjoyment. The confidence intervals of the indirect effect (b = 0.22; low: 0.07; high: 0.38) did not include zero, thus supporting mediation.

3.1.6 | Robustness tests

Although the violation of the multinormal distribution requirement for ML estimators, according to prior research (e.g., Reinartz et al., 2009), is practically nonexistent in covariance-based SEM, we replicated the analyses using an ML estimator with robust error terms (MLR) without such a distribution requirement. MLR does not allow bootstrapping procedures, but the estimated direct effects in the model were almost identical, indicating that this was not a threat to the results. We also included a direct effect of AR on purchase intention, but this effect was not significant. The findings, therefore, are robust.

3.1.7 | Discussion

Study 1 revealed that AR increases affective responses, which subsequently drive cognitive reactions (product attitude) and then behavioral reactions (purchase intention). Specifically, we showed that an AR shopping experience generates more enjoyment than a non-AR shopping experience, which then triggers inspiration. Inspiration, in turn, directly influences purchase intentions but also indirectly through more positive evaluations of the product. Surprisingly, AR did not directly influence inspiration, but the ad hoc measure we used, a limitation of this study, might be the reason for this result. Other potential limitations arise from the student sample and our research design, which assigned a specific product to the participants. In Study 2, we addressed these limitations and extended the findings from a product level to a brand level in a different product category.

3.2 | Study 2: How AR marketing drives brand attitude and WOM

3.2.1 | Objectives and research design

Study 2 aimed to address the limitations of Study 1 and extend its findings. We shifted from a product level (lamp) to a brand level (a makeup brand) to better mimic a real purchase situation, inspect brand attitude (vs. product attitude) as a cognitive reaction, evaluate moderating effects, and add WOM as an additional outcome variable. Moreover, rather than relying on a student sample, the sample of Study 2 comprised participants recruited through a commercial market research firm in July 2021.

We followed the same two-group (AR-based vs. non-AR-based product presentation) between-subjects design as in Study 1. We employed a tripartite online survey in which female panel members could participate using a smartphone or tablet. The first part of the survey asked participants to provide personal details and assess their expertise with and relationship to nail polish in general. These questions served as icebreakers.

The second part of the survey instructed the participants to imagine that they were planning to buy a new nail polish for themselves. Then, they were redirected to the website of the nail polish brand essie and randomly assigned to either the AR or non-AR condition. In the AR condition, the participants used the virtual try-on salon, where they could virtually paint their nails. In the non-AR condition, the participants browsed the essie website and looked at various nail polishes. In line with research recommendations (e.g., Fennis et al., 2011; Gollwitzer & Sheeran, 2006), the conditions were designed in a way that resembled a real purchase situation as much as possible to prevent the occurrence of potential discrepancies between intended and actual behavior ("intention-behavior-gap"). After choosing their favorite nail polish, the participants had to take screenshots of how they used the website/AR feature before returning to the survey.

In the third part of the survey, the participants answered questions about the key measures of interest (see Table SA2) and provided their demographic information. We asked if they encountered any problems during the survey and instructed them to upload the screenshots they had taken while using the website/AR feature.

3.2.2 | Sample

We exclusively preselected women from the United Kingdom. They were informed that they could only take the survey on a mobile device (i.e., a smartphone or tablet). We excluded 54 participants who either experienced issues with the AR features ($n = 13$) or did not upload the correct screenshots ($n = 41$; seven participants in the AR condition used the website, five in the non-AR condition used AR, and 29 used a hand model instead of AR). In addition, we also removed another 23 participants who missed at least one attention check. In total, 251 female panel members between 18 and 63 years of age participated ($n_{AR} = 128$, $n_{non-AR} = 123$).

We checked whether the two sub-samples were significantly different in terms of socio-demographic characteristics and found no significant differences in age (AR = 28.48, non-AR = 28.43; $t = 0.04$, $p = 0.97$), level of education ($\chi^2 = 1.43$, $p = 0.49$), and job (student vs. professional: $\chi^2 = 0.36$, $p = 0.55$). Moreover, the percentage of users who had used AR before was not significantly different between the two sub-samples (AR = 8.1%, non-AR = 7.0%; $\chi^2 = 0.101$, $p = 0.74$).

3.2.3 | Measures

Similar to Study 1, we relied on the validated constructs from the literature and tailored them to the study context. All the constructs were measured on seven-point Likert scales (1 = "*strongly disagree*," 7 = "*strongly agree*"). We used the three-item scale from Putrevu and Lord (1994; e.g., "It is very likely that I will buy one of the essie nail polishes once I need a new nail polish") to measure purchase intention. Furthermore, to measure WOM intention toward the brand, we used the three-item scale (e.g., "I would say positive things about the brand essie to other people") adapted from Zeithaml et al. (1996) and Heller et al. (2019a). The participants specified their attitudes toward the brand on three items (Bruner, 1998; e.g., "In my opinion, the brand essie is appealing"). We adopted a five-item scale from Böttger et al. (2017) and Thrash et al. (2017) to measure how inspired the participants felt after interacting with the AR feature or the traditional website view (e.g., "Interacting with the essie website (virtual try-on salon) stimulated my imagination"). We measured enjoyment using a three-item scale from Venkatesh and Bala (2008; e.g., "I find using the essie website (virtual try-on salon) to be enjoyable"). The participants indicated their product knowledge of four items (adopted from Beatty & Talpade, 1994; Mittal & Lee, 1989; Smith & Park, 1992). An exemplary item was, "If a friend asked me about nail polishes, I could give them advice." Finally, to determine the participants' familiarity with AR, we used a three-item scale from Hinsch et al. (2020; e.g., "I know a lot about augmented reality"). Table 3 shows the correlations between the latent constructs, and Table SA3 in the Appendix lists all the items. We also measured product involvement as a control variable

TABLE 3 Correlations and descriptive statistics (Study 2)

		M	SD	1	2	3	4	5	6	7
1	Enjoyment	4.97	1.50							
2	Inspiration	4.27	1.49	0.73						
3	Purchase intention	4.69	1.53	0.46	0.56					
4	Brand attitude (post)	5.81	1.11	0.38	0.42	0.63				
5	WOM	5.02	1.19	0.47	0.59	0.83	0.75			
6	Brand attitude (pre)	5.91	1.29	0.16	0.23	0.39	0.62	0.43		
7	AR familiarity	4.04	1.40	−0.08	−0.05	0.03	0.01	0.01	0.00	
8	Product knowledge	4.45	1.40	0.19	0.30	0.35	0.28	0.40	0.09	0.16

Note: Correlations of latent variables (Mplus, ML, CFA).

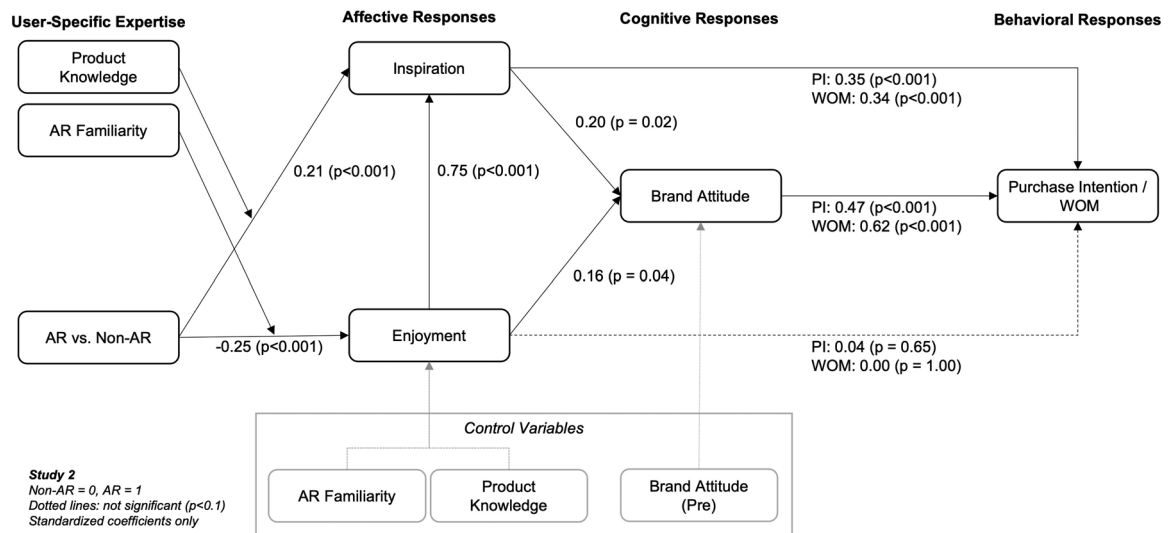Abbreviations: AR, augmented reality; CFA, confirmatory factor analysis.

FIGURE 3 Study 2: How augmented reality marketing drives brand attitude and WOM. WOM, word-of-mouth

(e.g., "Nail polish matters a lot to me"; Beatty & Talpade, 1994; Mittal & Lee, 1989). As in Study 1, the established tests for common method bias and discriminant validity did not indicate any concerns; likewise, CFA results were excellent (CFI = 0.98; TLI = 0.98; SRMR = 0.04; RMESA = 0.04; χ^2 = 392.4; df = 296), including local fit measures.

3.2.4 | Results

We ran a structural equation model in Mplus 8.5 (Muthén & Muthén, 2017) to test the hypothesized effects. As we hypothesized the interaction terms, we treated the moderating variables as control variables in the main model. Inspection of our main effects model revealed a good model fit (CFI = 0.97; TLI = 0.97; RMSEA = 0.05; SRMR = 0.07; χ^2 = 507.8, df = 328).

Our results (Figure 3) showed a significant effect of AR (vs. non-AR) on inspiration (β = 0.21, p < 0.001), confirming H2. Although AR significantly related to enjoyment, the effect was negative (β = −0.25, p < 0.001) and not positive, as hypothesized in H1. We discuss this finding

in more detail later. We found enjoyment as a driver of inspiration (β = 0.75, p < 0.001), which supports H4. In line with H7a and H7b, enjoyment (β = 0.16, p = 0.04) and inspiration (β = 0.20, p = 0.02) served as drivers of brand attitude. We also found positive effects of inspiration and brand attitude on purchase intention (inspiration: β = 0.35, p < 0.001; brand attitude: β = 0.47, p < 0.001), and WOM (inspiration: β = 0.34, p < 0.001; brand attitude: β = 0.62, p < 0.001), thus supporting H5b, H8a, H6b, and H8b. We found no direct significant effects of enjoyment on our dependent variables (purchase intention: β = 0.04, p = 0.65; WOM: β = 0.00, p = 1.00), rejecting H5a and H6a.

Notably, we also included three control variables in the model. We controlled the hypothesized effects on brand attitude (measured after using the app) for existing brand attitudes, which we measured before the app was used. By doing so, we aimed to parcel out the existing brand attitudes, which may lead to an overestimated effect (e.g., consumers with a more positive [vs. negative] brand attitude may evaluate a brand's app better [vs. worse]). Given the "longitudinal" nature of this approach, we allowed correlations between the error terms of each pre- and post-brand attitude item (Simonin & Ruth, 1998). As expected, pre-brand

attitude's effect was significant ($\beta = 0.58$, $p < 0.001$). Next, as we investigated the moderating effects of familiarity with AR and product knowledge, as discussed subsequently, we controlled for the direct effects $\beta = 0.21$, $p < 0.001$), and inspiration (familiarity: $\beta = -0.02$, $p = 0.74$; product knowledge: $\beta = 0.18$, $p < 0.001$). Controlling for the direct effects of the moderating variables on our dependent variables is a requirement for interaction probing with the correlated variables (Aiken et al., 1991).

As in Study 1, we assessed the indirect effects of AR on our focal constructs (Table 4). Although the total effects were not significant (confidence intervals included zero), inspecting the specific indirect effects revealed notable insights. In particular, the effects through AR, but not through inspiration, tended to be supportive for the brand. In contrast, the indirect effects that included enjoyment were negative.

TABLE 4 Indirect effects of augmented reality on purchase intentions and WOM (Study 2)

	CI low	b	CI high
Total	−0.28	−0.05	0.20
AR → Enjoyment → Purchase Intention	−0.17	−0.03	0.12
AR → Inspiration → Purchase Intention	0.09	0.22	0.39
AR → Enjoyment → Inspiration → Purchase Intention	−0.36	−0.19	−0.07
AR → Enjoyment → Brand Attitude → Purchase Intention	−0.13	−0.06	−0.00
AR → Inspiration → Brand Attitude → Purchase Intention	0.01	0.06	0.14
AR → Enjoyment → Inspiration → Brand Attitude → Purchase Intention	−0.12	−0.05	−0.01
Total	−0.19	−0.03	0.14
AR → Enjoyment → WOM	−0.08	0.00	0.09
AR → Inspiration → WOM	0.07	0.15	0.25
AR → Enjoyment → Inspiration → WOM	−0.24	−0.13	−0.06
AR → Enjoyment → Brand Attitude → WOM	−0.11	−0.05	−0.00
AR → Inspiration → Brand Attitude → WOM	0.01	0.06	0.13
AR → Enjoyment → Inspiration → Brand Attitude → WOM	−0.11	−0.05	−0.01

Abbreviations: AR, augmented reality; CI, confidence interval; WOM, word-of-mouth.

3.2.5 | Robustness test

As in Study 1, we conducted a series of robustness tests to assess the stability of our findings. First, we replicated the effects using an MLR estimator. The results were almost identical. Second, we modeled the direct effect of pre-brand attitude on purchase intention. This effect was not significant and did not change the results, indicating that the change in brand attitude influenced by the app experience drives purchase and WOM intentions. We also estimated the model without pre-brand attitude and, as expected, the effect of inspiration on brand attitude increased, most likely because the coefficient included bidirectional effects. Finally, when we eliminated the moderators (i.e., control variables) from the model, the conclusions remained.

3.2.6 | Structural model: Moderating effects

To test the proposed moderation effects, we included the latent interaction terms using the LMS approach in Mplus (XWITH command) in the model. To reduce model complexity, we tested each interaction separately. Table 5 presents the direct effects of the independent variable (AR) and the moderating variable on the dependent variable as well as the interaction term. Familiarity with AR, the results illustrate, moderates the effect of AR on enjoyment. In line with H3a, the more familiar the participants were with AR, the less they enjoyed using the AR app. This result makes good sense because users are likely to compare their AR experiences with their past AR experiences. In the case of the essie app, the more familiar the participants were with AR, the more likely they were to experience a more joyful AR environment. We found no support for H3b ($p > 0.05$).

3.2.7 | Discussion

Study 2 addressed some of the limitations in terms of the measurement of key constructs (e.g., inspiration) of Study 1, extended its findings to another product category and a brand level, and incorporated moderating variables. In general, we found the same patterns as in Study 1 but also some differences. First, the most surprising finding was that AR led to a decrease in enjoyment. Second, while the effect of AR on our ad hoc measure of inspiration was not significant ($p = 0.15$) in Study 1, Study 2 applied an established measure and found a direct effect.

TABLE 5 Overview of the moderation effects tested in Study 2

Relationship	Moderator	AR → DV	Mod → DV	ARxMod → DV	Hyp.	Mod?
AR→ Enjoyment	AR Familiarity	−0.77 ($p < 0.001$)	0.16 ($p = 0.21$)	−0.70 ($p < 0.001$)	H3a	Yes
AR→ Inspiration	Product Knowledge	0.62 ($p < 0.001$)	0.17 ($p = 0.01$)	0.00 ($p = 0.98$)	H3b	No

Note: Only unstandardized effects are presented. Moderation was established if the interaction term was significant. Two-tailed *t* tests.
Abbreviation: AR, augmented reality.

4 | GENERAL DISCUSSION

With the growing relevance of AR-based product presentations, there has been an increasing number of discussions on the role of AR in marketing research and applications (Dwivedi et al., 2020; Hoyer et al., 2020; Rauschnabel et al., 2022). However, although research has tested AR's potential to boost purchases (e.g., Heller et al., 2019b; Hilken et al., 2017; Kowalczuk et al., 2021; Smink et al., 2020), it has not yet fully explored the respective mechanisms that result in behavioral changes. Responding to recent calls to fill this gap (e.g., Kumar, 2021), we focused on the interplay between two affective responses (enjoyment and inspiration) as well as cognitive and behavioral reactions. AR, we found, can trigger purchase and WOM intentions, but these positive effects are not guaranteed. For example, the AR scenario we used in Study 2 triggered lower levels of enjoyment than the non-AR version. Moreover, we identified inspiration as a core construct that directly drives the evaluation of products and brands, purchase intentions, and WOM. These findings contribute to the literature in multiple ways.

4.1 | Theoretical contributions

A more holistic understanding of the psychological mechanisms that drive decision-making processes is required. According to Scholz and Duffy (2018), many existing studies are "app-centric" and investigate why consumers like specific AR apps. We echo this view and argue that a more detailed examination of crucial marketing variables is beneficial. Therefore, our study assessed AR's impact on a specific product (Study 1) and a brand in general (Study 2). Although affective, cognitive, and behavioral responses to AR characteristics have been of great interest to research (Kumar, 2021), studies have, to some extent, neglected the interplay of these three responses (e.g., Javornik, 2016) and the crucial role of affect as an initial response. At the core of the Affect-as-Information Theory, research has found that affective responses are crucial elements in decision-making processes (Schwarz & Clore, 2003; Schwarz, 2012; Winkielman et al., 2003). In line with this, research in the AR context has shown that affective responses influence behavior (Hilken et al., 2017; Kowalczuk et al., 2021; Smink et al., 2020; tom Dieck et al., 2018; Vonkeman et al., 2017). For instance, in their study on affective drivers of purchase and WOM intention, Hilken et al. (2017) concluded that enjoyment plays a central role in boosting behavioral intentions. We replicated this finding in our research and showed that enjoyment can trigger inspiration and lead to a more positive cognitive response. Therefore, our studies contribute to the literature by showing that inspiration and brand/product attitudes mediate the effects of enjoyment on behavioral responses.

Previous marketing research has also largely concluded that AR is more enjoyable than non-AR (Barhorst et al., 2021; Kowalczuk et al., 2021; Poushneh & Vasquez-Parraga, 2017; Yim et al., 2017). However, our study showed that AR-based product presentations do not necessarily enhance enjoyment; rather, depending on technical implementation and users' expertise, users might find non-AR even more entertaining than AR. We assumed that, in this case, AR-evoked positive feelings (in terms of inspiration) and negative feelings (in terms of enjoyment) canceled each other out. Another potential explanation is the nature of the device; AR itself is not limited to handheld mobile devices. Users might find holding a device with one hand between their eyes and their other hand distracting, so the same effect might be greater with other hardware. For example, specific AR glasses can enable higher levels of technological embodiment and allow users to operate the AR hands-free.

4.2 | Managerial implications

A crucial question for marketers is whether AR-based product presentations (vs. traditional website experiences) substantially affect key marketing metrics (Rauschnabel et al., 2022). Investigating the affective, cognitive, and behavioral responses to product presentations of furniture (lamp) and beauty products (nail polish), we revealed differences in the affective responses to various product presentation formats, which, in turn, are the key drivers of behavior. Our results indicate that AR entails more positive short-, medium-, and long-term outcomes than non-AR. First, we found that AR increased immediate purchase intentions by enhancing the levels of enjoyment, inspiration, and brand attitude. Second, WOM intention was also found to be higher. This kind of consumer-induced advertisement for respective brands and products might stimulate sales in the medium term. Third, with increasing levels of brand attitude, we found that AR may also lead to valuable long-term relationships between consumers and brands. Thus, AR may serve not only as a sales channel but also as a customer relationship–building and retention tool.

In line with this reasoning, we found that consumers familiar with the product felt even more inspired when using AR than those who were not. This heightened state of inspiration may, in turn, drive behavior. We thus recommend using AR features particularly to approach existing and, thus, knowledgeable customers and/or to present commonly known, everyday product categories with which a broader group of consumers are familiar.

Our results also showed that AR-based product presentations are not necessarily superior to non-AR-based product presentations. We thus recommend that AR-app creators carefully pretest how enjoyable the created environment is to avoid negative effects on inspiration and, consequently, on brand attitude and behavioral responses. Furthermore, users' familiarity with AR moderates the intensity of product presentation-elicited enjoyment. For example, if consumers are familiar with AR, they might easily relate their current emotions about the product presentation to their past experiences. If their current enjoyment exceeds their last experience, they might find AR even more enjoyable. Conversely, if consumers are familiar with AR, the "backfiring effect" of less enjoyable AR-based product presentations might be more prominent. This means that, if AR is commonly used in the respective industry, marketers need to provide

high-quality and entertaining AR features. Moreover, regardless of the common practice in a marketer's industry, the respective target group might also play a crucial role. For example, if a marketer wants to satisfy "digital natives" who generally have more expertise in new technologies such as AR than older generations, enjoyable AR features are crucial.

4.3 | Limitations and future research

As with any study, this study has limitations. First, both of our studies were based on rather young European samples. Although young consumers, such as students, are typically among the first to adopt new technologies, using such a sample reduces the transferability of results to other target groups that might behave differently. Second, we followed the standards in most previous studies (e.g., Hilken et al., 2017, 2021; Kowalczuk et al., 2021) and measured the focal constructs as intentions (rather than actual behavior) using realistic descriptions adjusted to the context. Though this strengthens internal validity, external validity might suffer. In other words, whether, or to what extent, these intentions translate into actual purchases remains beyond the scope of this study. Future research should tackle the aforementioned question with field or choice experiments. Moreover, we randomly assigned respondents to the AR versus Non-AR context, without screening out respondents with a low purchase interest in the corresponding product category. By doing so, we followed the standards in the AR marketing literature (e.g., Hilken et al., 2021; Kowalczuk et al., 2021, Smink et al., 2020). Including some respondents with no real purchase interest might have led to some sort of "noise" in the data. This "noise," however, should affect both experimental groups equally. As suggested by a reviewer, future research could control for general product attitudes or the respondents' stage in the customer journey. Such an approach could parcel out this variance and provide additional insights into AR along the customer journey (Rauschnabel et al., 2022).

Especially from a managerial perspective, Study 2 offers a relevant avenue for future research: What makes AR apps enjoyable? Identifying the reasons for the essie AR app's reduced user enjoyment was beyond the scope of our study (as this outcome was unexpected), but managers and AR developers could benefit from actionable guidelines on the features that constitute enjoyable AR apps. This would also respond to a recent editorial call by marketers to engage in more "practical" and design science research (Rauschnabel et al., 2022).

We also identified inspiration as a construct that links enjoyment and product/brand attitude. While few studies (Hinsch et al., 2020; Rauschnabel et al., 2019) have introduced inspiration as a powerful construct in AR, our study studied its potential in translating some sort of "fun" into intentions. This finding is interesting and leads to many questions for future research. For example, can inspiration also diminish (brand) attitudes and behaviors? How long does AR-induced inspiration last? Does the effect persist shortly after an app has been used, or even over multiple days or even longer? Does inspiration triggered by using an AR app lead to greater interest in AR in general?

In our study, we focused on brand attitude. However, Scholz and Duffy (2018) recently found that AR is particularly suitable for creating deep customer-brand relationships. As such, the interaction between AR and customer relationships and loyalty could be a fruitful area for further research (Hoyer et al., 2020). For example, how can brands specifically use AR to build sustainable long-term relationships, such as brand love (Batra et al., 2012), with consumers? As we showed herein, affective responses play a central role in AR. Research on consumer–brand relationships, such as brand love (Batra et al., 2012), should include multiple affective dimensions. Investigating such relational brand evaluations could extend the cognitive evaluation in this (brand attitude in Study 2) and related research (e.g., Javornik, 2016; Rauschnabel et al., 2019).

Moreover, we introduced the Affect-as-Information Theory to the AR marketing literature and argued that the theory has valuable implications for future AR research. First, scholars might explore the potentially changing intensity of and reliance on affective responses during decision-making over time and in the case of repeated use. As consumers are rapidly getting used to new technologies in general and AR features in particular, meeting their expectations might become even more difficult for marketers (e.g., Hinsch et al., 2020). In this case, consumers might perceive less positive AR-evoked emotions, which could hamper cognitive as well as behavioral outcomes. Beyond that, insights from the Affect-as-Information Theory research suggest that consumers' increasing expertise could also make them rely less on their emotions when making decisions (Ottati & Isbell, 1996; Sedikides, 1995). Likewise, prior AR research has revealed differences in decision-making based on consumers' processing styles (e.g. Hilken et al., 2017; Jessen et al., 2020). Inspired by this study, differences in consumers' general decision-making tendencies could moderate the paths from affective to behavioral responses in the Affect-as-Information Theory research. In addition, most AR studies used hedonic product stimuli, such as beauty products (e.g., Daassi & Debbabi, 2021; Gatter et al., 2021; Hilken et al., 2017; Scholz & Duffy, 2018; Smink et al., 2020), fashion apparel/accessories (e.g., Hilken et al., 2017; Kim & Forsythe, 2008; Pantano et al., 2017; Poushneh & Vasquez-Parraga, 2017; Qin et al., 2021; Vonkeman et al., 2017; Yim et al., 2017), home furnishings (e.g., Gatter et al., 2021; Heller et al., 2019b; Jessen et al., 2020; Kowalczuk et al., 2021; Qin et al., 2021; Rauschnabel et al., 2019; Rese et al., 2014; Smink et al., 2020), or food (e.g., Barhorst et al., 2021; Heller et al., 2019a; Hilken et al., 2021), which have been found to increase consumers' reliance on affect during decision-making (e.g., Chang & Pham, 2013; Pham, 1998; Pham et al., 2013). Hence, the investigation of AR in a more utilitarian context, one that is less sensitive to emotions, would add value. Likewise, shifting the focus from a pure B2C to a B2B context could be reasonable (Rauschnabel et. Al., 2022). In this case, the decisions might be based more on concrete facts rather than on the emotions perceived by individuals (Chang & Pham, 2013; Hsee & Weber, 1997; Raghunathan & Pham, 1999; Schwarz, 2012). Furthermore, a unique characteristic of AR is that content is integrated into a user's environment. Therefore, users might be influenced (in terms of changed mood and stress) not only by environmental factors — such as the presence and behavior of other people, the light situation, noise, and so on — but also by how content is

visualized and processed. Studying such situational factors through the lens of the Affect-as-Information Theory can enhance AR marketing theory and, furthermore, provide valuable insights for managers.

Finally, we discussed the Affect-as-Information Theory in the context of AR. Though VR shares some similarities with AR, the users are completely closed off from their physical environment. The Affect-as-Information Theory might also serve as a powerful theory for VR research, especially when compared with AR (Hilken et al., 2021).

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