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## RESEARCH ARTICLE OPEN ACCESS

# The Dark Side of a Big Smile: Detrimental Effects of Smile Intensity on Luxury Brand Advertising Effectiveness

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## ABSTRACT

The expresser's smile is a ubiquitous nonverbal communication cue used to elicit favorable impressions among consumers. However, does the expresser's smile exert persuasive power in luxury advertising, where exclusivity often outweighs approachability? Integrating the social-functional perspective of emotions with the stereotype content model of social judgments, we explore how, why, and when the intensity of a smile can adversely impact the effectiveness of luxury advertising. We demonstrate that a neutral expression (vs. a slight and broad smile) leads to higher levels of luxury ad engagement scores, click-through rates, ad attitudes, and purchase behaviors. This effect is unique to luxury products and driven by a serial processing mechanism: enhanced competence judgments and perceived ad credibility that surface when the expresser features a neutral expression. To provide a deeper understanding of how the persuasive impact of smile intensity vary depending on complementary nonverbal signals and individual level factors, we elucidate two boundary conditions: lay rationalism level of consumers and eye gaze direction of the expresser. Specifically, the detrimental effect of smile intensity on competence perceptions is attenuated for low-lay rationalistic consumers, who base their decisions on emotions, while the neutral expression facilitates higher ad effectiveness when paired with a direct gaze (vs. an averted gaze). Six preregistered studies, including field data on Instagram ads ( $N = 435$ ), two large-scale field experiments on Meta ( $N_{\text{total}} = 233,301$ ), and three controlled online experiments ( $N_{\text{total}} = 940$ ), using different luxury products as well as fictitious and real brands, support these findings. Theoretically, this research advances literature on the nonverbal communication of emotions and the psychology of luxury consumption by showing that smile intensity serves as a visual deterrent to the effectiveness of luxury advertising. Managerially, it offers implications for luxury brand marketers on how to leverage the psychophysical characteristics of facial expressions in their ad design and positioning strategies.

**JEL Classification:** M30, M31

## 1 | Introduction

*"A smile is the chosen vehicle of all ambiguities."—Herman Melville, The Piazza Tales*

(Melville 1856)

The personal luxury goods market (i.e., fashion accessories, apparel, bags, jewelry, watches, and eyewear) is projected to reach a staggering valuation of \$570 billion by 2030, with the total market capitalization poised to achieve \$2.5 trillion (D'Arpizio et al. 2024). Luxury advertisements (i.e., ads)—promotional content showcasing high-end products that emphasize exclusivity, superior quality, and

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status-enhancing attributes (Amatulli, De Angelis, and Donato 2020; Wiedmann, Hennigs, and Siebels 2009)—play a crucial role in achieving this growth and in reinforcing brand meaning (Puccinelli, Motyka, and Grewal 2010). In every luxury ad featuring models (i.e., expressers), so-called “*human brands*” (Ilicic and Brennan 2020), consumers (i.e., observers) detect and decode verbal and nonverbal signals. These nonverbal (e.g., facial expressions, gestures, postures) (Baldo et al. 2022) and verbal signals (e.g., product descriptions, slogans, banners) (Casado-Aranda, Sánchez-Fernández, and Viedma-del-Jesús 2022; Septianto, Kemper, and Northey 2023) serve as crucial communicative elements to project desired hedonic and utilitarian brand associations. Facial expressions, as central nonverbal signals, transmit information about models’ interaction intents without using words and include expressive emotions such as smiles and eye contact to influence luxury consumer behavior (Zhu et al. 2022). They often provide subconscious information that shapes how consumers interpret the ad’s purpose and positioning (DePaulo 1992; Kidwell and Hasford 2014). In luxury advertising, where brand image and exclusivity are essential (Oc et al. 2023), such nonverbal cues become even more decisive in crafting persuasive messages. Among other nonverbal cues, smiles—the omnipresent facial emotion—are often the initial stimuli that draw consumers’ attention (Kulczynski, Ilicic, and Baxter 2016), forming the focus of this research. We concentrate on smiles, as opposed to other facial expressions, as it is a dynamic nonverbal cue that influences perceptions of warmth and competence (Wang et al. 2017)—key dimensions in luxury advertising (Septianto, Seo, and Zhao 2022). Relative to other expressions, smile intensity allows luxury brands to form perceptions of exclusivity and approachability (Chen and Wyer 2020), making it a critical yet underexplored construct in shaping consumer judgments.

For instance, consider actress Léa Seydoux, the face of Louis Vuitton’s “*Spell on You*” perfume campaign. Could the intensity of her smile play a role in enhancing consumer engagement? Is her smile intensity merely a spontaneous artistic choice, or a strategic decision to align with the brand image, product theme, and target audience of Louis Vuitton? The intensity of a smile, as conveyed through contextualized facial expressions, reflects the valence of its strength (Abel and Kruger 2010). It can be classified into three types: (1) a neutral expression, which displays minimal facial muscle activity without showing the teeth and no positive/negative expression; (2) a slight smile, characterized by a partial upward turn of the mouth without raising the cheeks; and (3) a broad smile, marked by a full positive expression, an open mouth, and lifted cheeks (Kraus and Chen 2013; Wang et al. 2017). A dominant finding in the wide swath of social psychology literature is that smiles positively impact social perceptions and affect a wide range of interpersonal assessments. Research has long shown that individuals who display broad smiles are viewed as kinder (Thornton 1943), more trustworthy (Johnston, Miles, and Macrae 2010), more pleasant (Mueser et al. 1984), and warmer (Warren, Pezzuti, and Koley 2018) compared to those who seldom smile. Along these lines, the mounting service marketing literature suggests that sales personnel who exhibit stronger smiles enhance consumer interest in the service (Pugh 2001), increase service encounter satisfaction (Barger and Grandey 2006), and improve service quality appraisal (Choi, Choi, and Mattila 2020).

In parallel with these findings, former marketing communications research has indicated that the presence of a smiling expresser positively affects observers’ attitudes toward the ad, mainly attributing this effect to the contagious nature of positive emotions (Berg, Söderlund, and Lindström 2015; Kulczynski, Ilicic, and Baxter 2016; Trivedi and Teichert 2019). Ostensibly, these existing findings highlighting the advantages of smiling could lead to the biased inference that smiles always diffuse positive social signals. Nonetheless, not all smiles are alike or perceived identically. On a surface level, they can be wielded strategically to evoke different meanings, and the conclusions drawn from these previous studies do not seamlessly apply to the luxury consumption. This is because the evolutionary morphological characteristics of smiles (e.g., strength, duration) are context-specific, and their interpretation varies depending on the particular occasion on which they are displayed (Darwin 1872; Ekman 1993; Ekman and Oster 1979). Therefore, the effects of smile intensity could be contingent on various exogenous factors, including but not limited to the model’s gender (Chen and Wyer 2020), personality traits of consumers (Lee et al. 2018), product type (Kim and Read 2022), and the industry setting (Min and Hu 2022), among others.

From this perspective, daily observations within the luxury market raise doubts about the positive effects of smiling. Ironically, articles in the *New York Times* (Friedman 2023) and *The Guardian* (Bramley 2023) have highlighted that sales staff in high-end stores and models for luxury brands frequently adopt a more enigmatic presentation and wear stoic blank facial expressions, creating a sense of psychological distance from the mass market. In line with this, our field analysis of two leading luxury brands (Study 1) finds that a higher percentage of models display neutral expressions (45.7%) instead of slight (20.1%) and broad smiles (34.2%) in promoting luxury products. This yields the inquiry: What is the nature of these choices, and why do these real-world experiences appear to contradict early scholarly inferences? At first glance, it intuitively appears that idiosyncratic aspects of luxury brands (e.g., exclusivity) might make the conventional “*service with a smile*” mantra (Pugh 2001) less trivial in marketing luxury products. Perhaps the absence of a smile in advertising might project a sense of higher expertise or prestige, thus reducing ambiguity associated with the expresser’s motivation. Alternatively, luxury brands could opt for neutral expressions to better engage consumers in the narrative storyline of the product, ensuring the focus remains on the product rather than on the expresser.

Despite these observations, there is a dearth of research on the nexus of facial expressions and consumer behavior, exclusively in the ambit of luxury consumption. Accordingly, Chen and Wyer (2020) made a call for future investigations to determine the effectiveness of using smiling and non-smiling expressers in actual advertising contexts for prestigious brands. To date, only one exploratory study by Zhu et al. (2022) has divulged how smiling less in retail settings might positively affect price estimations for luxury products, yet they did not focus on advertising reactions. Broadly, what is known from prior luxury communication research is that factors like verbal message appeals (Amatulli, De Angelis, and Donato 2020), the visual portrayal of products (e.g., cold temperature cues, immersive art objects) (Park and Hadi 2020; Wang, Xu, and Zhang 2023), the physical attractiveness of expressers (Hudders et al. 2014), and the positioning of their cheeks (Park et al. 2021) are

salient displays, as are the social impressions they project (e.g., status, self-enhancement). What remains unexplored and the focus of our investigation is the persuasive power of smile intensity as a visual element in luxury advertising. Understanding this gap is both theoretically and practically pertinent to successfully grasp the mindset of contemporary luxury consumers regarding nonverbal marketing displays.

Against this backdrop, the current research aims to conclusively understand the following specific inquiries: (1) Do less intense smiles from expressers improve the effectiveness of luxury ads? (2) Does lower smile intensity enhance perceived competence of the expresser and ad credibility, leading to higher luxury ad effectiveness? and (3) How do lay rationalism level of consumers and eye gaze direction of the expresser moderate the impact of smile intensity on expresser's perceived competence and luxury ad effectiveness? Across six preregistered studies conducted in real-world and controlled settings, we propose and empirically unearth the downstream effects of smile intensity on ad engagement, ad attitudes, and concomitant purchase decisions. By integrating the social-functional account of emotions (Fridlund 1992; Keltner and Kring 1998; Keltner and Haidt 1999) with the stereotype content model perspective (Fiske et al. 2002; Judd et al. 2005), our research demonstrates that the underlying mechanisms of this effect are rooted in the varying assessments of competence judgments and perceived ad credibility. To endow a more fine-grained understanding of how the persuasive role of smile intensity might be inferred differently based on complementary nonverbal cues and consumer-level differences, we study two main boundary conditions: lay rationalism level of consumers and eye gaze direction of the expresser. Finally, we assess the pertinency of this effect to mass-market products.

Lay rationalism is the potent individual difference variable that reflects consumers' inclination to base their decisions on reasons versus feelings/emotions (Hsee et al. 2015). Given that all communications are inherently bidirectional (Cheng, Mukhopadhyay, and Williams 2020) and facial expressions can evoke diverse cognitive and affective responses in individuals (Buck 1980; Strack, Martin, and Stepper 1988), our research shows that the relative weight consumers place on reasons versus feelings in decision-making influences their interpretation of smile expressions, subsequently resulting in differed evaluations of luxury ads. As for gaze direction, it has been conceptualized as either direct (facing the observer) or averted (looking away from the observer)<sup>1</sup> (Kleinke 1986). Recognizing the importance of the model's gaze direction in comprehending the social meaning of smiles (Adams and Kleck 2003) and shaping ad receptivity (To and Patrick 2021), our argument posits that the effects of smile intensity are predicated on its congruence with the gaze direction. Specifically, we propose that a neutral expression tends to be more impactful when it is paired with a direct gaze (vs. an averted gaze).

This research offers theoretical, methodological, and practical contributions. Theoretically, our empiricism takes a comprehensive approach and deepens the conceptual understanding of facial expressions of emotions. Originally, it adds to the luxury marketing literature by theorizing smile intensity as a non-verbal disabler of luxury ad effectiveness, along with the processing mechanisms and boundaries of this effect.

Methodologically, we present a rigorous testing approach for assessing smile intensity, through a multi-method triangulation that includes Instagram field analysis, Meta field A/B tests, and controlled online experiments. Practically, our findings would assist luxury brand marketers in devising compelling facial expression management strategies. We articulate actionable insights on how to capitalize on different smile intensity levels based on their congruence with the gaze direction and lay rationalism tendencies.

## 2 | Theoretical Background and Conceptual Development

### 2.1 | Emotions as Social Cues: The Social-Functional Account and the Deliberate Regulation of Smiles

Emotions serve as powerful social cues, acting as nonverbal signals that can impact interactions between individuals and within groups (Manstead and Fisher 2001). Extant research documented how individuals perceive emotions as information to interpret the state and behavior of other individuals and react to their emotional displays (e.g., Van Kleef and Côté 2022). In the context of advertising, facial expressions are the external communicative tools that convey the internal psychological states sourced by emotions to others. For instance, the facial expression of the model in the ad signals the emotional tone or desired reaction of the product or brand, such as pleasure, thereby influencing the viewer's emotional response and engagement with the brand (Kulczynski, Ilicic, and Baxter 2016). Given that luxury product preferences are often driven by emotional and hedonic goals (Hennigs et al. 2012; Essiz and Senyuz 2024), we draw upon emotional accounts as the driver of the perceptions of facial expressions associated with luxury brands.

From an epistemological perspective, the roots of the debate concerning the connection between facial behavior and the social-functional account of emotions can be traced back to Darwin (1872). Contemplating the evolutionary origins of emotional expressions, Darwin was among the first to recognize the significant functional value of emotions in human interaction, particularly in evaluating the hospitality and friendliness of others. Moving forward, contemporary research on this perspective has depicted emotions as discrete, multichannel responses that empower individuals to adaptively tackle social challenges and seize social opportunities within the framework of continuous interactions (see Fridlund 1992; Keltner and Kring 1998; Keltner and Haidt 1999; Van Kleef 2009 for a detailed theoretical exposition). In a nutshell, this view is grounded in the premise that emotions provide structure to social interactions via three core functions: (1) evocative, (2) incentive, and (3) informative.

Principally, an individual's positive or negative emotional expression impacts the behavior of others by triggering emotions that are either assimilative or complementary—the evocative function (Keltner and Kring 1998). For instance, a happy spokesperson in a charitable organization's ad increases donations through psychological proximity and the contagion of happiness among observers (Baek et al. 2022). In addition, eliciting emotions shapes an observer's reaction towards specific behaviors—the incentive function (Keltner and Haidt 1999). An

example of this would be utilizing influencers to convey environmental emotions, which can incentivize consumers to engage in prosocial behaviors (Gerrath et al. 2024). More importantly, emotions communicate fine social information about the expresser through inference-making and affective reactions—the informative function (Van Kleef 2009).

Rooted in the social-functional account of emotions, emotions as social information framework provides a comprehensive overview of how the observers' behavior may be affected by the emotional expressions of others (Van Kleef, De Dreu, and Manstead 2010, 2016). For instance, an individual's positive emotional expression at work impacts the attraction from colleagues and lead to positive attributes in other personal traits (Staw, Sutton, and Pelled 1994). In a group setting, individuals can better infer the norms based on the emotional expressions of others, despite the absence of verbal communication (Hareli et al. 2013). Facial expressions of others may impact their warmth and competence in the service context (Wang et al. 2017) and coolness in the interpersonal context (Warren, Pezzuti, and Koley 2018). In general, individuals are more responsive towards the emotional expressions of the close others relative to strangers (Clark and Taraban 1991). Although previous research has provided valuable insights on the role of emotions as social cues in different settings, there is a need for further investigation into how emotional expressions function within the advertising context. In view of this, the present research builds on interpersonal effects of emotions (Van Kleef 2009), focusing on the informative function of emotions.

Against this background, facial expressions are a vital aspect of the social-functional account, providing an informative channel for expressing emotions and intentions, which in turn shapes the way individuals engage with each other (Chen and Wyer 2020). Among their other roles, facial expressions change according to strategic settings (Kim and Read 2022) and expressers' internal states (Shuqair et al. 2024). As in, facial expressions of emotions are not merely reflexive responses; they are modulated by bendable *display rules* learned through socialization and the process of regulating emotions (Ekman and Friesen 1975). Existing neuroimaging research supports this regulatory role, demonstrating that exposure to facial expressions triggers brain activity in the dorsomedial prefrontal cortex, a causal region in the formation of social impressions from faces (Ferrari et al. 2016). This evidence, interpreted from a social-psychological angle, underscores the prevalence of deliberate regulation (i.e., strategic display) of facial expressions for self-presentational purposes in everyday interactions and marketing communications.

The core feature of these strategic displays is that the expresser is aware of the signal being sent and is also cognizant that the signal is being observed (DePaulo 1992). Although this practice may occasionally elicit doubt regarding the persuasive intent of expressers (Ketelaar et al. 2012), it is crucial to note that such effortful displays are not necessarily indicative of deception or insincerity. To be explicit, they are employed to alter how consumers perceive the brand, ensuring that the posed expression maintains a certain degree of authenticity. Given that one of the key social roles of facial expressions is to communicate individual and brand level motivational competencies (Cheng, Mukhopadhyay, and Williams 2020), advertisers

deliberately exert control over models' expressions, especially in still images, through constant feedback mechanisms to manage the emotions conveyed for their advantage.

Unsurprisingly, such effort to control expressions does not always lead to increased consumer engagement. Yet, its usage remains pervasive, especially in luxury consumption settings, where nonverbal displays are purposefully operated to signal social distance (Zhu et al. 2022). Hither, we hone in on two basic facial expressions of emotions—smiles and gaze direction—not only due to their decisive role in coordinating interpersonal exchanges but also because they are usually regarded as diagnostic sources for social inference-making, owing to their potency to shape first impressions (DePaulo 1992), hardwired nature (Ekman 1993), and adaptive functions (Macrae et al. 2002). These aspects allow expressers to deliberately adjust the smile intensity<sup>2</sup> and gaze direction for strategic uses by tapping into hardwired systems that are in place for the spontaneous expression of those emotions.

## 2.2 | Smiles as a Key Component of Nonverbal Communication in the Advertising Environment

Nonverbal cues in advertising appear to be at least as important as verbal ones, if not more so. Existing research argues that facial expressions account for approximately 55% of interpersonal communication (Puccinelli, Motyka, and Grewal 2010). They convey a wide range of information, including insights into personality traits (Kidwell and Hasford 2014), psychological states (DePaulo 1992), and cognitive processes (Hutton and Nolte 2011). Among other nonverbal cues, smiles hold a pervasive role in shaping consumers' first ad impressions (Shuqair et al. 2024) and overall brand judgments (Trivedi and Teichert 2019). When utilized effectively, smile intensity functions as a potent communication tool in luxury contexts, where fostering brand engagement and establishing source credibility are essential for guiding positive consumer judgments (Hennigs et al. 2012). In furtherance of this, we conducted a systematic review of the existing literature on the influence of smiling on observer perceptions (see Table 1). Our comprehensive review reveals that previous research has largely neglected the influence of smile intensity in advertising, especially within the luxury sector. Per this review, the salience of the smile, its potency in advertising communication, and its occasionally ambiguous interpretation collectively underscore its role as a powerful self-presentation strategy in luxury advertising.

But what exactly constitutes luxury, and how do we define it in the context of advertising? Defining the luxury requires a holistic understanding of the value propositions of luxury brands (Eastman, Shin, and Ruhland 2020). We define the luxury concept in tandem with the holistic view of Wiedmann, Hennigs and Siebels (2009) as the notion of sensuality, opulence, extravagance, premium quality, premium pricing, characteristics of uniqueness and innovation, along with its symbolic importance for consumers. Building on this definition, we frame the concept of luxury advertising as a strategic marketing approach designed to elevate the perceived value of luxury brands. This form of communication targets consumers' aspirations for social status, self-actualization, and personal achievement, utilizing functional, experiential, emotional, and

**TABLE 1** | Effects of smiling on consumer behavior: A systematic review of previous literature and contextualization of current research.

Author(s)	Journal	Theory	Method	Context and conditions (origin) and stimuli	Smile			Dependent variable(s)	Key findings
					Mediator(s)	Moderator(s)	Confounding variable(s)/covariate(s)		
1-Ketelaar et al. (2012)	Evolutionary Psychology	(●) Darwinian typologies on facial expressions	(●) Four laboratory experiments (N <sub>i</sub> = 199)	(●) Fashion and sports (●) (United States)	(●) Duchenne happiness smiles versus embarrassment smiles (●) Fashion models and football players	(●) Degree of smiling X	(●) Negative emotions (happiness, anger, disgust, and contempt)	(●) Prestige (●) Dominance (●) Prosociality	(●) Smile effect = (-) (●) The authors contend that smiles are linked to lower social status. Smiles particularly signal lower dominance and prestige among fashion models and football players.
2-Kraus and Chen (2013)	Emotion	(●) Typologies on nonverbal facial expressions and dominance	(●) Content analysis (N = 152 fighters) (●) MTurk survey data (N = 178)	(●) Professional fighting context (●) (United States)	(●) Smiling versus neutral (●) Fighters	(●) Aggression (●) Hostility X	(●) Fighter height (●) Fighter ability (●) Betting odds	(●) Fighter performance: (1) Effective striking and (2) grappling (●) Physical dominance judgments	(●) Smile effect = (-) (●) Smiles are perceived as an indicator of physical performance. (●) The key finding is that professional fighters who smile more in a pre-fight photo facing their opponents tend to perform worse in the fight compared to those who smile less intensely.
3-Berg, Söderlund and Lindström (2015)	Journal of Consumer Marketing	(●) Emotional contagion and affect infusion mechanisms	(●) Two laboratory and one eye tracking experiments (N <sub>i</sub> = 204)	(●) Ad and packaging design (●) (Sweden)	(●) Smiling versus non-smiling (●) Print ad models	(●) Perceived typicality (●) Emotional contagion X	X	(●) Consumer joy (●) Ad attitude (●) Packaging attitude	(●) Smile effect = (+) (●) The research shows that pictures of models with smiles lead to increased consumer joy and more favorable attitude towards ads and product packaging.
4-Kulczynski, Ilicic and Baxter (2016)	Psychology & Marketing	(●) Facial feedback theory	(●) Three online experiments (N <sub>i</sub> = 874)	(●) Endorsement context (●) (Australian)	(●) Resting versus smiling (●) Celebrity models	(●) Emotional contagion (i.e., pleasantness) (●) Source expressive display-based judgments X	(●) Source familiarity (●) Perceived celebrity-product match (match vs. mismatch)	(●) Ad attitude (●) Brand attitude (●) Purchase intention	(●) Smile effect = (+) (●) The research advocates that when an endorser is depicted smiling in an ad, consumers experience heightened pleasure. This positive emotion bridges the connection between the endorser's facial expression and

(Continues)

TABLE 1 | (Continued)

Author(s)	Journal	Theory	Method	Context and (origin)	Smile conditions and stimuli	Mediator(s)	Moderator(s)	Confounding variable(s)/covariate(s)	Dependent variable(s)	Key findings
5-Wang et al. (2017)	Journal of Consumer Research	(●) The stereotype content model (●) Social-functional perspective of emotions	(●) Four online and laboratory experiments; one field study (N = 1267)	(●) Nutrition coaching (●) Legal services (●) Crowd-funding (●) (United States)	(●) Broad versus slight (●) Marketers: Stockbroker, nutritionist, and lawyer	(●) Warmth and competence perceptions	(●) Regulatory focus (promotion vs. prevention) (●) Consumption risk (high vs. low)	(●) Target attractiveness (●) Smile authenticity (●) Attention paid to the ad (●) Ad processing (●) Perceived difficulty (●) Persuasion knowledge (●) Perceived inappropriateness of the persuasion attempt (●) Gender of the project creator (●) Total project funding (●) Entrepreneurial experience of the project creator (●) If the project was promoted as a "staff pick" by Kickstarter. com.	(●) Social judgments (●) Purchase intention (●) Sign-up behavior (●) Perceived (competent), but less skilled (slight smile). (●) Moreover, the facilitative effect of smile intensity on warmth perceptions is especially evident in low-risk consumption situations and among promotion-focused individuals. Whilst the detrimental effect of smile intensity on competence perceptions is prudent in high-risk consumption situations and among prevention-focused counterparts.	attitude towards the ad, the brand, and purchase intention. (●) The emotional response caused by seeing a smiling endorser in an ad happens effortlessly, but only when the source is recognized by the consumer and aligns with the endorsed product. (●) Smile effect = (+, -, Mixed) (●) The authors conclude that a marketer with a broad smile is often perceived by consumers as more approachable and warmer, but less skilled (competent), than one with a slight smile. (●) Moreover, the facilitative effect of smile intensity on warmth perceptions is especially evident in low-risk consumption situations and among promotion-focused individuals. Whilst the detrimental effect of smile intensity on competence perceptions is prudent in high-risk consumption situations and among prevention-focused counterparts.

(Continues)

TABLE 1 | (Continued)

Author(s)	Journal	Theory	Method	Smile		Mediator(s)	Moderator(s)	Confounding variable(s)/covariate(s)	Dependent variable(s)	Key findings
				Context and (origin)	conditions and stimuli					
6-Lee et al. (2018)	ACR North American Advances	(●) The social-functional perspective of emotions	(●) Two experiments (NA)	(●) Ad travel agency and gym services (●) Country: NA	(●) Broad versus slight (●) Service employees	X	(●) Relationship norm (communal vs. exchange) (●) Self-construal (independent vs. interdependent)	(●) Video demonstration of the project (●) Processing fluency	(●) Brand attitude (●) Purchase intention	(●) Smile effect = (+, -, Mixed) (●) The research indicates that relationship norms and self-construal can affect the way consumers interpret a model's broad or slight smile. Specifically, consumers with an interdependent self-construal find a model's broad smile more convincing than a slight smile. This effect is more pronounced in a communal relationship setting than in an exchange one.
7-Warren, Pezzuti and Koley (2018)	Journal of Consumer Psychology	(●) Typologies on coolness (●) Emotional expressions as social information model	(●) Five online and laboratory experiments (N <sub>1</sub> = 1310)	(●) Fashion ads and competitive contexts (●) (United States)	(●) Inexpressive face versus smiling (●) Fashion models and fighters	(●) Perceived coolness (●) Warmth (●)	(●) Social context (competitive vs. non-competitive)	(●) Competence (●) Divergence (●) Rebellious	(●) Brand attitude (●) Brand choice (●) Warmth (●) Dominance	(●) Smile effect = (+) (●) The research challenges the prevalent notion that not displaying smiling expression (i.e., being inexpressive) is synonymous with being cool. (●) The authors propose that being inexpressive can make individuals appear <i>cool</i> rather than <i>cool</i> in non-competitive situations (e.g., models in clothing ads). Conversely, in competitive situations—such as an athlete confronting the opponent—being inexpressive can enhance perceptions of coolness by advocating dominance.

(Continues)



TABLE 1 | (Continued)

Author(s)	Journal	Theory	Method	Context and (origin)	Smile conditions and stimuli	Mediator(s)	Moderator(s)	Confounding variable(s)/covariate(s)	Dependent variable(s)	Key findings
8-Broeder and Goorden (2019)	Tourism & Management Studies	X	(●) An online experiment (N = 311)	(●) Celebrity-endorsed Nike shoe ad on the Instagram (●) (Spain and Netherland)	(●) Genuine versus ingenuine smiling (●) Print ad models	(●) Model attractiveness (●) Model credibility	(●) National/cultural background (Dutch vs. Spanish)	X	(●) Purchase intention	(●) Smile effect = (+) (●) The finding is that an ad featuring a celebrity with a genuine smile has a stronger positive impact on purchase intention than one with an ingenuine smile. (●) An ingenuine smile is professed as less attractive and negatively affects the intent to purchase. Contrarywise, a genuine smile is viewed as more credible and positively influences purchase intention. This effect is more pronounced among Spanish consumers compared to Dutch ones.
9-Trivedi and Teichert (2019)	Journal of Business Research	(●) Emotional contagion theory	(●) A secondary survey data (N = 421 real ads)	(●) Print ads on 22 product categories (●) (Germany)	(●) Smiling versus non-smiling (●) Print ad models	X	(●) Model gender (male vs. female) (●) Consumer gender (male vs. female)	X	(●) Closer ad examination intention (●) Information search intention (●) Positive attitude change towards the brand (●) Brand integration into the consideration set (●) Brand purchase intention	(●) Smile effect = (+) (●) The research indicates that a smiling model not only induces a positive shift in brand attitude but also affects how a product is positioned within a consideration set and influences consumers' purchase intentions. (●) For female consumers, a smiling female model, as opposed to a non-smiling male model, exerts a greater influence on enhancing brand perception and the propensity to purchase. Conversely, smiling models, regardless of their gender, positively influence male consumers' perceptions.

(Continues)

TABLE 1 | (Continued)

Author(s)	Journal	Theory	Method	Context and (origin)	Smile conditions and stimuli	Mediator(s)	Moderator(s)	Confounding variable(s)/ covariate(s)	Dependent variable(s)	Key findings
10-Chen and Wyer (2020)	International Journal of Research in Marketing	(●) Typologies on facial expressions and social role expectations	(●) Five MTurk and laboratory experiments (N <sub>1</sub> = 1906).	(●) Print ads of low and high prestige brands (●) (Hong Kong and United States)	(●) Smiling versus neutral (●) Print ad models	(●) Deviation from expectation (●) Endorser status	(●) Gender of the endorser (male vs. female) (●) Product type (high vs. low status)	(●) Target ethnicity (●) Various personality traits (e.g., achievement-oriented, decisive, empathic)	(●) Actual product consumption behavior (●) Endorser competence (●) Endorser warmth	(●) Smile effect = (+, -) (●) The research demonstrates that the way endorsers' smiles influence their perceived social status is determined by how well they align with normative expectations. This alignment varies contingent on the endorser's gender, whether male or female. (●) This effect was more prominent only when the brand was unfamiliar one, and the social status associated with possessing products were not previously recognized.
11-Cheng, Mukhopadhyay and Williams (2020)	Journal of Consumer Research	(●) Social-functional view of emotions (●) The evolutionary and psychophysical characteristics of facial expressions	(●) Five scenario-based laboratory and MTurk experiments (N <sub>1</sub> = 839)	(●) Consumer testimonials and online fundraising (●) Western (United States) and Asian (Hong Kong)	(●) Large Duchenne versus small (●) Marketers	(●) Inferred intrinsic motivation	(●) Endorser's motivation ambiguity (ambiguous vs. unambiguous)	(●) Consumer's mood (●) Liking of the endorser (●) Liking of the website design	(●) Anticipated service quality (●) Photo choice (●) Inferred extrinsic motivation	(●) Smile effect = (+) (●) The research shows that when the motivation behind an actor's action is unclear, observers tend to attribute higher intrinsic motivation to those who exhibit larger (i.e., Duchenne-like) smiles. (●) Therefore, actors purposefully showcase broader and more Duchenne-like smiles when aiming to convey intrinsic motivation to observers.
12-Choi, Choi and Mattila (2020)	Service Science	(●) The social role theory and gender stereotypes (●) Emotional contagion theory	(●) A scenario based MTurk experiment (N = 168)	(●) Hotel service encounters (●) (United States)	(●) Slight versus broad (●) Service employee	(●) Perceived authenticity	(●) Smile intensity (slight vs. broad) (●) Service provider's gender (male vs. female)	(●) Service provider's attractiveness (●) Scenario realism (●) Gender	(●) Consumer satisfaction (●) The research investigates the interaction effects of smile intensity and the service provider's gender. A broad smile is perceived as more authentic when it comes from a female	(Continues)

TABLE 1 | (Continued)

Author(s)	Journal	Theory	Method	Context and conditions (origin)	Smile conditions and stimuli	Mediator(s)	Moderator(s)	Confounding variable(s)/covariate(s)	Dependent variable(s)	Key findings
13-Isabella and Vieira (2020)	RAUSP Management Journal	(●) Emotional contagion theory	(●) Three laboratory experiments (N <sub>t</sub> = 472)	(●) Print ads on TV brands, fashion products, and MP3 players (●) (Brazil)	(●) Neutral versus happy (●) Retailer models	✕	(●) Smile type (neutral vs. genuine vs. false) (●) Gender congruence effect (model gender vs. viewer gender)	(●) Positive and negative emotion dimensions	(●) Mimicry/Feedback (●) Purchase intent (●) Attitude toward the product (●) Reliability (●) Product appeal	(●) Smile effect = (+) (●) The research supports the link between facial expression of the ad model and the mimicry synchronization observed in participants. (●) It also reveals that genuine smiles influence product evaluation more positively than false smiles. (●) Lastly, it indicates a congruence effect between gender and product, where the gender of both model and participants moderates the relationship between the model's facial expression and participants' product assessment.
14-Wu, Ou and Li (2020)	Journal of Contemporary Marketing Science	(●) Stimulus-organism-response framework (●) The elaboration likelihood model	(●) Four laboratory experiments (N <sub>t</sub> = 580)	(●) Online retailer store context (●) (China)	(●) Smiling versus neutral versus no facial expression	(●) Pleasure (●) Arousal	(●) Emotional receptivity (high vs. low) (●) The consumption situation	(●) Perceived attractiveness (●) Perceived amount of information (●) Gender	(●) Approach behavior (●) Smile effect = (+) (●) The research exhibits that a smiling facial expression resulted in the highest score for consumer approach behavior. Pleasure and arousal were the	(Continues)

TABLE 1 | (Continued)

Author(s)	Journal	Theory	Method	Context and (origin)	Smile conditions and stimuli	Mediator(s)	Moderator(s)	Confounding variable(s)/covariate(s)	Dependent variable(s)	Key findings
15-Baek et al. (2022)	International Journal of Advertising	(●) Brand anthropomorphism theory (●) Construal level theory	(●) A MTurk and a laboratory experiment (N <sub>i</sub> = 367)	(●) Charity context and human or machinelike AI agents (●) (United States)	(●) Models of online retailer stores (●) Big versus small versus without (●) Virtual and humanlike agents	(●) Psychological closeness	(●) Smile existence (big vs. small vs. without)	(●) General attitude toward artificial intelligence agents	(●) Donation intention (●) Smile effect = (+)	underlying mechanisms behind this effect. (●) For individuals with high emotional receptivity, smiling faces resulted in the most pronounced approach behavior, while those with low emotional receptivity responded best to neutral facial expressions. (●) Participants showed the strongest approach behavior towards smiling facial expressions in browsing situations, but not in purchasing conditions. (●) The research suggests that smiles can be incorporated in the ongoing endeavors to make AI more human-like. (●) The key outcome is that consumers feel a deeper psychological closeness and are more inclined to donate when they are approached by broad smiling AI agents with human-like appearances, as opposed to those resemble robots.
16-Kim and Read (2022)	Marketing Intelligence & Planning	(●) The stereotype content model of social judgments (●) The behavior from intergroup affect-stereotypes map	(●) Two Qualtrics experiments (N <sub>i</sub> = 746)	(●) Instagram and influencer advertising (●) (United States)	(●) Upper versus closed versus neutral (●) Fictitious micro-influencers	(●) Perceived warmth (●) Admiration	(●) Product category (high vs. low risk) (●) Ad message orientation (self vs. social)	(●) Product involvement (●) Age (●) Gender	(●) Purchase intention (●) Online behavioral intention (●) Brand attitude	(●) Smile effect = (+) (●) The research demonstrates that when Instagram influencers display a high smile intensity (vs. medium and neutral expressions), it enhances the perception of warmth and evokes feelings of admiration.

(Continues)

TABLE 1 | (Continued)

Author(s)	Journal	Theory	Method	Context and (origin)	Smile		Moderator(s)	Confounding variable(s)/covariate(s)	Dependent variable(s)	Key findings
					and conditions	and stimuli				
17-Min and Hu (2022)	International Journal of Hospitality Management	(●) Emotions as social information model (●) The stereotype content model of social judgments	(●) Two scenario-based MTurk and Qualtrics experiments (N <sub>t</sub> = 435)	(●) Restaurant and law services (●) (United States)	(●) Slight versus broad (●) Service employees	(●) Perceived warmth (●) Perceived competence	(●) Service sector orientation (hedonic vs. utilitarian)	(●) Gender (●) Age	(●) Ad attitude (●) Purchase intention	This, in turn, leads to more positive attitudes towards the brand and the ad, and also promotes increased online brand engagement. (●) This positive effect of smiling remains consistent across various product categories and different ad message contents. (●) Smile effect = (+) (●) The research shows that broad smiles from service employees evoke feelings of warmth, which subsequently enhances consumers' perception of employees' competence, leading to an increased inclination among consumers to make a purchase. (●) The research further unveils the boundary role of industry settings. Intriguingly, the positive impact of perceived warmth on evaluations of competence is more pronounced in hedonic-focused service industries (e.g., restaurants) compared to utilitarian-focused services (e.g., law firms).
18-Yao et al. (2022)	Marketing Intelligence & Planning	(●) The stereotype content model of social judgments (●) The agentic-communal model of power	(●) Three laboratory experiments and a WeChat experiment (N <sub>t</sub> = 638)	(●) Hotel and medical services (●) (China)	(●) Slight versus broad (●) Service employees	(●) Perceived warmth (●) Perceived competence	(●) Sense of power (high vs. low)	(●) Woman's attractiveness (●) Smile authenticity	(●) Purchase intention (●) Subjective well-being	(●) Smile effect = (+) (●) The research uncovers the underlying dynamics of how service providers' smile intensity and consumers' sense of power influence purchase intention and subjective well-being

(Continues)

TABLE 1 | (Continued)

Author(s)	Journal	Theory	Method	Context and (origin)	Smile conditions and stimuli	Mediator(s)	Moderator(s)	Confounding variable(s)/covariate(s)	Dependent variable(s)	Key findings
<b>19-The current research</b>	Psychology & Marketing	(●) Social-functional perspective of emotions (●)The stereotype content model of social judgments	(●) Study 1: Instagram field data, content analysis (N=435 Gucci and Louis Vuitton ads) (●) Study 2a: Meta field study (N = 161,643 Meta users) (●) Study 2b: Meta field study (N = 71,658 Meta users) (●) Study 3: Prolific®	(●) Luxury ads (United States and China)	(●) Broad versus slight versus neutral (●)Fictitious and real luxury brand models (●) Products used: Study 2a (jewelries), Study 2b (sunglasses), Study 3 (a watch), Study 4 (a unisex bag, and the Supplementary Study	(●) Model's perceived competence (●) Perceived ad credibility	(●) Lay rationalism (reasons vs. feelings) (●) Eye gaze direction (direct vs. averted) (●) Product type (luxury vs. mass-market)	(●) Product involvement (●) Brand familiarity (●) Brand personality differences (●) Perceived luxuriousness (●) Perceived prestige (●) Perceived likeability and perceived warmth (●) Ad exposure time (●) Age, education, and annual income (●) Consumer and model gender (●) Facial attractiveness	(●) Total ad engagement score (●) Click-through rate and cost-per click (●) Ad attitude (●) Purchase intention of the promoted product (●) Ad exposure time (●) Age, education, and annual income (●) Consumer and model gender (●) Facial attractiveness	through warmth and competence judgments. (●) The key finding is that consumers with a lower sense of power tend to view service providers with broad smiles as warmer, whereas those with a higher sense of power perceive them as less competent. (●) Moreover, a broad smile of the marketer increases satisfaction and purchase intention by amplifying feelings of warmth among consumers with a lower sense of power.

(Continues)

TABLE 1 | (Continued)

Author(s)	Journal	Theory	Method	Context and conditions (origin)	Smile and stimuli	Mediator(s)	Moderator(s)	Confounding variable(s)/covariate(s)	Dependent variable(s)	Key findings
			experiment (N = 248) (•) Study 4: Prolific® experiment (N = 342) (•) Supplementary Study: Prolific® experiment (N = 350)	(makeup products).				(•) Trustworthiness of the smile (•) Model ethnicity (•) Authenticity of the smile expression (•) Celebrity presence (•) Co-branding promotion(s) (•) Number of captions per post (•) Number of hashtags per post (•) Post age	low LR score. This effect occurs because less lay rationalistic participants perceive higher competence and ad credibility when the model displays a broad smile.  (•) Finally, the model's gaze direction (direct vs. averted) interacts with smile intensity (neutral vs. broad) to impact luxury ad effectiveness. The ad model with a direct (vs. averted) gaze is more effective when paired with a neutral expression (vs. broad) smile.	

Note: (†) Studies are organized chronologically. NA refers to no information available on the type of experiment, sample size, or research origin; t refers to the total sample size.

symbolic messaging to consistently reinforce the brand's luxurious identity and distinction from mass-market appeals. In this context, our review raises a critical query: How effective are different levels of smile intensity in fostering engagement in luxury advertising?

### 2.3 | Smiling and Luxury Advertising Effectiveness

Advertising effectiveness is recognized as a multi-dimensional construct (Chang 2010) and we define it as the extent to which an ad meets its intended objectives, such as shaping attitudes, behaviors, and perceptions among the target audience. Building on previous conceptualizations (Baldo et al. 2022; To and Patrick 2021), our definition includes multiple dimensions, such as capturing attention, shaping engagement, attitudes, and ultimately driving purchase behavior. Aligned with this perspective, we view the effectiveness of luxury advertising as the ability of its verbal and nonverbal components to persuasively engage observers and their proactive role in fostering a positive predisposition towards the brand and its products. In line with To and Patrick (2021), our perception suggests that compatible nonverbal signals in luxury ads are likely to empower observers, endowing them with a heightened sense of competence. This premise rests on the status-related benefits associated with luxury ads—that is, their potential to signal prestige and power (Wiedmann, Hennigs, and Siebels 2009).

Principally, Darwin (1872) seminal observations on smiles were the first to suggest that they could disclose information about the social status of the expresser. Darwin's proposition was confirmed in naturalistic conditions, coinciding with the competition hypothesis of smiling and laughter, which posits that smiles assist in structuring social hierarchies and signal a low motivation to compete for status (Dunbar and Mehu 2008). Similarly, prior research in social psychology has found that smiling correlates with lower levels of dominance and prestige in fashion models (Ketelaar et al. 2012). Warren, Pezzuti and Koley (2018) also argue that the *coolness* associated with fashion models derives from their emotional inexpressiveness, implying that status is a relatively cold cognition, not easily swayed by the direct impact of smiling. These studies offer preliminary indications of the possible downstream consequences of smiling in status-oriented settings. Synthesizing these findings, it is highly plausible that smiling in luxury advertising may indicate a disinclination to modify or improve the *status quo*; thus, more intense smiles may not serve well in endorsing luxury products.

Additionally, purchasing luxury products is more than a mere transaction; it embodies an experience that reflects personal success (Wang, Xu, and Zhang 2023). We hence foresee that a neutral expression, characterized by its emotional composure, epitomizes the confidence and achievement that luxury consumers want to associate with themselves. By adhering to normative expectations and avoiding overly exaggerated expressions of happiness, a neutral expression is anticipated to set realistic expectations about the promoted luxury product. This can be particularly effective in our context, as luxury consumers are skeptical of bold claims (Septianto, Kemper, and Northey 2023). Considering that consumers often leverage

nonverbal signals to articulate their self-defining principles (Essiz and Senyuz 2024), we surmise that lower smile intensity aligns with the image and aesthetics both luxury consumers and brands aim for, thereby more accurately reflecting the portrayal of costly displays in luxury ads. Our theoretical reasoning leads us to deduce that featuring a broad smile will inversely impact the effectiveness of luxury ads. Given that there has been no direct test of how smile intensity influences luxury ad effectiveness, our fundamental hypothesis deals with the presence of the detrimental smile intensity effect:

**H1.** *The expresser's smile intensity will be detrimental to the effectiveness of luxury ads. Specifically, luxury ads that consist of a broad smiling expresser will be less effective than one's without a smile.*

## 2.4 | Perceived Competence and Ad Credibility as Underlying Mechanisms: A Stereotype Content Focus

The discourse up to this point compels us to ask: Through what factors does smile intensity impact the success of luxury ads? Pertaining to this query, one might focus on stereotypes, which serve as simplified beliefs for categorizing and streamlining information about the expresser's characteristics (Judd et al. 2005). Originally developed by Fiske et al. (2002) to dissect the differing perceptions among social groups, the stereotype content model has since been adapted to evaluate brands (Septianto, Seo, and Zhao 2022) and probe into individual perceptions, specifically how the intensity of facial expressions results in distinct social judgments (Min and Hu 2022). Simply put, the stereotype content model highlights that social judgments are anchored in two core dimensions: warmth and competence. Warmth relates to the expresser's perceived social intentions, reflecting communal assessments of kindness, courtesy, friendliness, and helpfulness, whereas competence allows observers to gauge the expresser's abilities, involving agentic traits related to expertise, self-confidence, power, and achievement orientation (Fiske et al. 2002). Together, these two dimensions are vastly predictive in explaining how people categorize others and aid observers in regulating their behavioral responses (Fiske, Cuddy, and Glick 2007).

While it is conceptually possible to be perceived as high in both warmth and competence, earlier research has shown the weight of these dimensions often varies according to nature and type of consumption activity (Chen and Wyer 2020). Although it could be true that emotions are commonly tied to the warmth component of the stereotype content model (Fiske et al. 2002), the context of luxury branding necessitates a different approach. From this perspective, Septianto, Seo and Zhao (2022) suggest that luxury brands embody the stereotype of competence since observers generally associate luxury with augmenting one's status and regard it as a testament to expertise. This prospect is plausible, given that luxury products demand careful consideration before purchase and the marketer's competence in promoting the product's features is warranted to minimize potential purchasing risks. Building upon Fiske et al.'s (2002) observation that status stereotypically predicts high competence, we aver that the expresser's perceived competence can

more vividly articulate the benefits and selling propositions of luxury products, though it may come at the cost of diminished warmth<sup>3</sup>.

In view of this backdrop, one might ask how competence can be conveyed nonverbally in luxury advertising? Integrating the informative function of emotions with the stereotype content model, we propose that the lower emotional intensity displayed through facial expressions provides competence-based informational cues for observers to form social appraisals about the expresser, which subsequently shapes their behavioral intentions toward the luxury ad and promoted product. Corroborating our proposition, past consumer research offers some initial evidence regarding the detrimental effect of smile intensity on competence judgments in service encounters (Wang et al. 2017; Yao et al. 2022). Likewise, early research in impression formation has connected broad smiles with reduced levels of aggression, dominance, and performance (Kraus and Chen 2013)—traits pivotal for securing status and power. Besides, broad smiles (vs. neutral expressions) are unequivocally associated with low achievement motivation, elevated levels of sociability, and signify the availability to form social relationships, projecting an image of a carefree, happy-go-lucky attitude (Wu, Ou, and Li 2020). Such dispositions are at odds with the power-oriented mindset of luxury consumers (Dubois, Jung, and Ordabayeva 2021) and the traits associated with competence—exclusivity, determination, and seriousness—that are integral to the essence of luxury marketing (Oc et al. 2023). Linking these observations, we suggest that the broad smile would signal a non-agentic orientation, diluting perceptions of competence in the absence of additional nonverbal cues. As such, neutral expression is expected to bolster competence judgments.

Furthermore, we postulate that this heightened sense of competence will manifest a positive spillover effect, augmenting the ad's credibility and its aggregate persuasive impact, as the expresser's competence lends more authenticity to the luxury ad content (Goor et al. 2020) and diminishes skepticism (Septianto, Kemper, and Northey 2023). In the present context, we conceptualize ad credibility as the degree to which observers find the visual and verbal displays in luxury ads to be meaningful, credible, realistic, and persuasive. This is consistent with generic operationalizations of the construct (Sarofim and Cabano 2018). In the present context, our proposed serial mediation model is pertinent under several theoretical frameworks concerning the effects of expressers: the affect transfer hypothesis (Stewart et al. 2018), which suggests that emotional responses to an expresser are transferred to the ad evaluation, and the source-credibility model (Tormala and Petty 2004), which posits that the expresser is perceived to have expertise or knowledge about the product. Our perspective also aligns with the cognitive processing framework (Shiv and Fedorikhin 1999), suggesting that trait-level evaluations (e.g., competence) provide the basis for higher-order judgments, including ad credibility. This is further grounded in the halo effect, where the positive attributes of the expresser are transferred to the brand they represent (Nicolau, Mellinas, and Martín-Fuentes 2020). Based on these rationales, we suggest that when an expresser exhibits a neutral expression (vs. a broad) smile, it communicates expertise—a trait that consumers may attribute to the brand itself. This mechanism is particularly relevant in luxury advertising, where associating the brand with high competence is essential (Shimul and Phau 2022).



Based on this viewpoint, we posit that if observers do not perceive manipulative intentions, their stereotypic judgments will more closely resemble the expresser's intended message. We expect this to occur because observing facial expressions induces mimicry behaviors, increasing the chances of passive facilitation (e.g., forming associations) with those deemed competent (Isabella and Vieira 2020). When observers mimic the facial expressions they detect, such as a neutral expression, they unconsciously align their attitudes and emotions with those expressed, facilitating a higher acceptance of the ad's nonverbal message (Min and Hu 2022). In addition, our serial mediation expectation aligns with the social comparison hypothesis, which posits that individuals assess themselves in relation to others (Festinger 1954; Gerber, Wheeler, and Suls 2018). In the context of luxury advertising, consumers often compare themselves to the competent expresser, aspiring to embody the qualities and status that the expresser represents (Zhu et al. 2022). This social comparison can enhance the ad's credibility, as consumers view the expresser as a reliable source of information that can help them attain similar status. Given the direct role of ad credibility as an indicator of consumer engagement (To and Patrick 2021) and reflecting on the totality of the literature discussed, we argue that expressers who maintain neutral expressions will be viewed as more competent sources of information. This impression, in turn, will amplify the ad's credibility and enhance its effectiveness. Formally, we hypothesize:

**H2a.** *The perceived competence of the expresser will positively impact the perceived credibility of luxury ads.*

**H2b.** *The impact of smile intensity on luxury ad effectiveness will be serially mediated by perceived competence and ad credibility. Specifically, the expresser's neutral expression (vs. broad) smile will lead to higher ad effectiveness through enhanced competence judgments and ad credibility.*

## 2.5 | Boundary Condition of Lay Rationalism

Many consumer decisions, including judgments towards luxury advertising, necessitate balancing the feeling (affect-based) inferences against rational (cognition-driven) observations (Shiv and Fedorikhin 1999). Phenomenologically, dual process theory expounds that some consumers heavily rely on intuitive thinking characterized by implicit, automatic, and emotionally laden responses, while others engage in deliberate, analytical, and articulated evaluations (Kahneman 2003). Grounded in the tenets of dual process theory, the lay notion of rationality is conceptualized as a personality trait that renders how consumers prioritize logical reasoning over feelings, or vice versa, in constructing their decision-making<sup>4</sup> (Hsee et al. 2015, 2003).

Hitherto, a small yet growing body of research demonstrates that lay rationalism functions as a moderating force in the relationship among several consumption-related variables, specifically decisions regarding pricing presentations (Gina Cui, Sam Kim, and Kim 2021), the design of visually dynamic imagery (Fennell and Schneider 2023), and the socio-psychological patterns of luxury purchases (Wang et al. 2020). In operationalizing this construct, this research stream classifies consumers' lay level into two groups: high or low. Markedly,

consumers with high lay rationalism inclinations favor logical thinking, whilst those with low lay rationalism are more swayed by their emotions. Germane to our research, Hsee et al. (2015) conjecture that consumers with high lay rationalism are more receptive to central-route persuasion in ads, which emphasizes factual information. In contrast, those with low lay rationalism are more drawn to peripheral-route persuasion, predisposing them to select alternatives that provoke affective experiences.

Analogously, we argue that judgments of neutral expressions and broad smiles will likely interact with consumers' lay rationalism levels in shaping the effectiveness of luxury ads. Guided by the informative function of facial expressions, this reasoning is plausible as the ability of consumers to balance cognitive processes and emotional reactions hinges on how they observe and decode smile displays (Kidwell and Hasford 2014). Our argument is also coherent with the facial feedback hypothesis (Buck 1980; Shuqair et al. 2024), which posits that facial expressions causally impact the regulation and activation of consumers' affective responses. Contemplating that each person navigates the luxury market with a unique set of consumption values and personality traits (Essiz and Senyuz 2024), it would be misleading to assume that facial cues in luxury ads are interpreted uniformly by everyone. To reiterate, a consumer with a strong preference for analytical reasoning might interpret the same smile differently, resulting in social judgments, compared to someone who prioritizes immediate emotional gratification. This subjectivity in consumer judgments makes the epistemological foundation of lay rationalism interesting, prompting an exploration of its importance vis-à-vis smile intensity.

More central to our conceptual reasoning, high lay rationalism consumers are purported to excessively concentrate on rationally superior attributes and cognitive efficiency while processing facial expressions (Bengart and Vogt 2023). Congruently, we foresee that a neutral expression that symbolizes competence-grounded utilities such as prestige and professionalism in luxury ads might be more appealing to their evaluative standards. This prediction is consistent with the self-justification view of Hsee et al. (2003). As such, it is sensible that the logical disposition of these consumers heightens their propensity to meticulously evaluate the risks associated with nonverbal displays and favor self-justifiable options that lessen the likelihood of negative consequences. Hence, they may be less prone to develop favorable judgments about the warmth conveyed through broad smiles, potentially viewing it as a deceptive persuasive attempt (cf. Wang et al. 2017) and questioning its alignment with the luxury brand's values and the key attributes of the advertised product. Conversely, we envisage that consumers with low lay rationalism will focus on the positive aspects of a broad smile and overlook potential drawbacks tied to it, including the perceived lack of competence. This is because they possess a greater ability to decipher emotional expressions and tend to interpret nonverbal signals strenuously, attracted to them on an intuitive level (Johnston, Miles, and Macrae 2010). For these consumers, the positive feelings (e.g., approachability, excitement) and emotional contagion induced by a model's broad smile may operate as a simple heuristic, encouraging them to establish a positive connection with the luxury ad. Building on this discourse, we predict:

**H3a.** *Lay rationalism level of consumers will interact with smile intensity in predicting luxury ad effectiveness. Specifically, for high lay rationalistic consumers, a neutral expression (vs. broad) smile will result in higher ad effectiveness; for low lay rationalistic counterparts, the effects will be reversed.*

**H3b.** *The moderating role of lay rationalism in the relationship between smile intensity and luxury ad effectiveness will be serially mediated by perceived competence and ad credibility. Specifically, high (vs. low) lay rationalistic consumers will perceive higher competence and ad credibility when the expresser displays a neutral expression (vs. broad) smile.*

## 2.6 | Boundary Condition of Eye Gaze Direction

It is well established that any complete account of smile judgments requires considering additional nonverbal facial properties (Willis, Palermo, and Burke 2011). This ultimately encourages us to inquire: Which nonverbal signals may interact with smile intensity to influence consumer responses to luxury ads? The direction of the model's eye gaze stands out as one complementary signal, given the role eyes play as communicative channels for the exchange of information between individuals (Mason, Tatkow, and Macrae 2005). By signaling the locus of attention in visual processing, eyes take precedence over other facial cues in terms of perceptual importance (Hutton and Nolte 2011), while the gaze direction provides contextual information about the expresser's attitude and temperament (To and Patrick 2021). Additionally, eye gaze emits social signals that align or diverge from the behavioral intentions communicated by a smile expression (Macrae et al. 2002). In this regard, an observer might interpret the same smile differently depending on the direction in which the expresser is looking. Despite the prominence of this factor, the interaction between gaze direction and smile intensity in influencing advertising reactions has remained an uncharted area of inquiry, a void we plan to probe.

Here, we conceptualize eye gaze, in line with the central view of Kleinke (1986), as the direction in which one looks at another's face and classify it as direct gaze (looking directly at another's face) or averted gaze (looking away from another's face). Formerly, the literature regarding gaze direction has primarily centered on its implications for interpersonal interactions and social perceptions. Previous social psychology research has revealed a strong preference for direct gaze over averted gaze in personal communication, as direct eye contact is associated with positive characteristics, including increased credibility (Hemsley and Doob 1978), visibility, openness (Mason, Tatkow, and Macrae 2005), know-how (Kaisler and Leder 2016), and authenticity (Ilicic and Brennan 2020). Similarly, neuropsychology studies have found that direct gaze amplifies perceptions of facial attractiveness by activating the brain's central reward systems (Kampe et al. 2001) and intensifies the functioning of elements associated with social cognition, such as face recognition (Farroni et al. 2007). On the other hand, averted gaze has been identified as a marker of disengagement: avoidance (Adams and Kleck 2003), and correlates with negative consequences in social interactions, such as reduction of intimacy, lower interpersonal power (Lochman and Allen 1981), lower self-esteem, and dishonesty (Puccinelli, Motyka, and Grewal 2010). Per these

insights, it surfaces that both direct gaze and neutral expressions transmit comparable social signals.

Against this background, we argue that displaying gaze direction and smile intensity in a coherent manner can establish a sense of engagement between the observer and the expresser, thereby improving the persuasive power of the luxury ad. Our reasoning is consistent with the shared signal hypothesis, which stresses the significance of receiving uniform signals from gaze direction and smiles to explicitly interpret facial expressions (Adams and Kleck 2003). Considering that establishing high-power distance and social status are cardinal for luxury brands (Dubois, Jung, and Ordabayeva 2021), it is expected that combining a direct gaze with a neutral expression could more accurately project a picture of prestige and social presence. In conjunction with existing research on the match-up effect of facial expressions (Ilicic and Brennan 2020; Wang et al. 2018), this congruity is surmised to amplify the expresser's perceived expertise and the ad's credibility by aligning with the expectations consumers hold for luxury brands. Contrary to a broad smile paired with an averted gaze, which could come across as overly manifested and inauthentic (Goor et al. 2020; Shen and Rao 2016), a direct gaze coupled with a neutral expression is likely to consolidate the central route of persuasion, resulting in a more deliberate and consistent processing of facial displays. In summation, we extrapolate that the detrimental smile intensity effect will be contingent upon the expresser's gaze direction in expediting the effectiveness of luxury advertising. We hence conjecture:

**H4a.** *The expresser's gaze direction will interact with smile intensity to influence luxury ad effectiveness. Specifically, the expresser with a direct (vs. averted) gaze will be more effective when paired with a neutral expression (vs. broad) smile.*

**H4b.** *The moderating role of gaze direction in the relationship between smile intensity and luxury ad effectiveness will be serially mediated by perceived competence and ad credibility. Specifically, consumers will perceive higher competence and ad credibility when the expresser displays a direct (vs. averted) gaze coupled with a neutral expression (vs. broad) smile.*

## 2.7 | Conceptual Overview of Studies

Our empirical package consists of six preregistered studies and four pretests to examine proposed hypotheses. In Figure 1, we present a visual illustration of our conceptual framework, along with an overview of these studies. In high-powered online field settings, Studies 1, 2a, and 2b test and conceptually replicate the baseline effect, the detrimental impact of smile intensity on luxury ad effectiveness, by gathering field data from Instagram and conducting multiple real-time ad campaigns on Meta (formerly Facebook). Based on the controlled online experiment, Study 3 further establishes causality between smile intensity and ad effectiveness by analyzing the perceived competence of the expresser and ad credibility as serial processing mechanisms behind the baseline effect. It also investigates how consumers' categorical lay rationalism levels interact with smile intensity in determining ad effectiveness. Continuing this vein, Study 4 extends the continuous moderating effect of lay rationalism and explores the direction of the expresser's eye gaze as

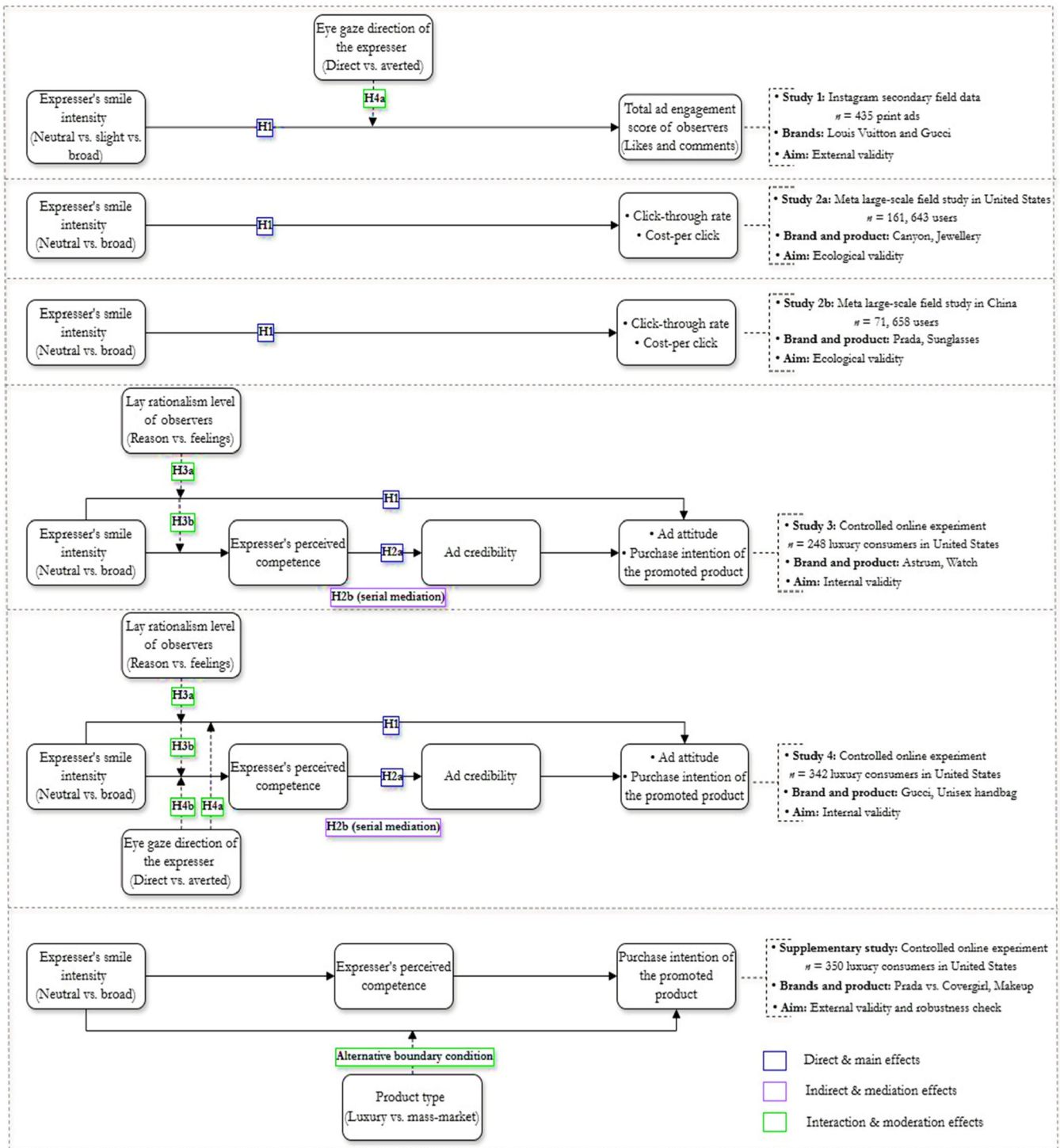


FIGURE 1 | Conceptual overview of studies.

another boundary factor. The supplementary study finally tests the pertinency of the detrimental smile intensity effect to mass-market products.

Across all studies, we operationalized multiple behavioral and self-reported proxy variables to quantify ad effectiveness and ruled out several alternative accounts, particularly those linked to the brand personality factors and appearances of expressers. We encompassed different luxury models and products, including both fictional and real brands, and recruited a diverse

pool of participants with representative samples from the US and China, all aimed at ensuring the generalizability of our findings. In structuring our experiments, we adhered to the methodological design considerations outlined by Viglia, Zaefarian and Ulqinaku (2021, pp.196–198) and explicitly reported all conditions. Manipulations were validated based on pretests and did not involve celebrities, as such figures are tied to stereotypes of high competence and credibility (Kulczynski, Ilicic, and Baxter 2016). Particularly, the sample sizes of our experimental studies were determined before data collection

using G\*Power 3.1 (Faul et al. 2009). In all univariate and multivariate analysis setups, the number of recruited participants was sufficient to identify a medium effect size ( $f = 0.25$ ) with more than 95% statistical power at a significance level of 0.05, thus exceeding the recommendations (i.e., > 80% power) suggested for behavioral studies (Cohen 2013). For brevity, construct measures and their adapted sources are reported in the Appendix A.

### 3 | Study 1: A Field Data of Print Ads on Instagram and the Initial Empirical Evidence

Study 1 was preregistered ([aspredicted.org/KMY\\_HC3](https://aspredicted.org/KMY_HC3)) and laid the groundwork for a systematic exploration into the role of smile intensity in luxury advertising. The aim of this study was twofold. First, it was designed to investigate our  $H_1$ , which concerns the detrimental effect of smile intensity on luxury ad effectiveness. Second, it served as a preliminary exploration into the moderating role of gaze direction. In this study, we collected publicly available Instagram print ads from two premier luxury brands: Louis Vuitton and Gucci. Instagram, which has experienced rapid global growth and boasts more than five hundred million daily active users, provided an ideal backdrop for our study due to its popularity for luxury ad campaigns (Bagadiya 2024). This platform promotes interactive engagement, allowing users to like, share, and comment on posts, enabling a bidirectional exchange between luxury brands and their customers. Accordingly, online print ads from Louis Vuitton and Gucci frequently highlight the facial expressions of expressers, especially smiles, which are vital in forming consumer receptivity through nonverbal means (Essiz and Senyuz 2024). This allowed us to code the intensity of the expressers' smiles in their posts.

At the time of our investigation, the decision to choose these brands was based on their comparable Instagram metrics: total post numbers (7289<sub>Louis Vuitton</sub> vs. 7186<sub>Gucci</sub>), follower counts (54.3M<sub>Louis Vuitton</sub> vs. 52.4M<sub>Gucci</sub>), and engagement rates (0.20%<sub>Louis Vuitton</sub> vs. 0.19%<sub>Gucci</sub>) (Phlanx 2023). This similarity was paramount to reduce the risk of confounding effects, such as brand popularity and peripheral differences in social media visibility (Ashley and Tuten 2015). Focusing on actual luxury brands ensured a realistic evaluation of facial expressions in actual advertising contexts. To further mitigate biases associated with unobserved background factors and parasocial interactions involving followers and non-followers of these brands, we scraped (via [apify.com/apify/instagram-scraper](https://apify.com/apify/instagram-scraper)) and analyzed all their posts (5565<sub>Louis Vuitton + Gucci</sub>) published during a period of 3 years and 2 months (from July 1, 2020, to until our data collection date: September 1, 2023), thereby securing an observational dataset. The ad coding process took place over the course of August and September 2023.

#### 3.1 | Data and Measurements

##### 3.1.1 | Data Collection and Coding Criteria

In the first phase, each collected post from Louis Vuitton (2826<sub>total</sub>) and Gucci (2739<sub>total</sub>) within the set timeframe was

subjected to analysis by two independent coders who were naive to the hypotheses of this research. This analysis was based on the following criteria: 1) confirmation that the post is a print ad (excluded otherwise), 2) presence of the expresser in the print ad (excluded if absent), and 3) number of expressers featured in the print ad (excluded if more than one). Following the recommendations of Wang et al. (2017), print ads displaying (1) partial facial views, (2) invisible eye gaze, and (3) repeated appearances of the same expresser on different occasions were omitted from the analysis. For conceptual clarity, the Instagram print ad is characterized by its static nature, meaning it is a single, non-animated image rather than a video or carousel of multiple images (Beichert et al. 2023). We deliberately did not consider any video ads, reels, and stories from these brands, as they seldom feature dynamic facial expressions. Upon filtering out observations that failed to meet these criteria, we ended up with a total of 435 print ads (207<sub>Louis Vuitton</sub> and 228<sub>Gucci</sub>) as the final unit of analysis.

##### 3.1.2 | Main Independent Variable

In accordance with the extant literature, we next presented the coders with sample smile expressions from the American Multiracial Faces Database (AMFD) (Chen, Norman, and Nam 2021) and the Montreal Set of Facial Displays of Emotion (MSFDE) (Beaupré and Hess 2006). This step was taken to familiarize them with the main classifications of smile intensity: neutral, slight, and broad. Subsequently, coders categorized the smile expressions into three dummy groups: 0 representing a neutral expression (absence of a positive/negative expression, the lack of visible teeth, and minimal muscle activity in the face), 1 indicating a slight smile (a gentle upturn of the mouth without cheek elevation), and 2 for a broad smile (a positive expression with an open mouth and/or elevated cheeks). The intercoder agreement was  $\alpha_{\text{Louis Vuitton}} = 0.95$  and  $\alpha_{\text{Gucci}} = 0.94$ . Any discrepancies in coding were resolved through further discussions among the coders and principal investigators. In such instances, discussions involving principal investigators were solely aimed at reinforcing the objective definition of smile intensity. Importantly, principal investigators did not influence the coders' decisions but rather ensured adherence to the predefined criteria. As depicted in Figure 2, for

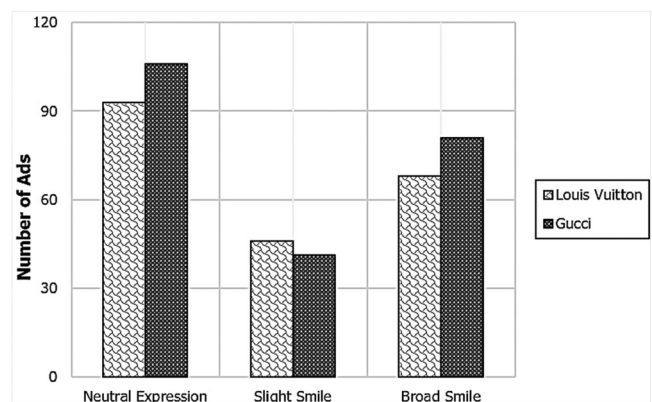
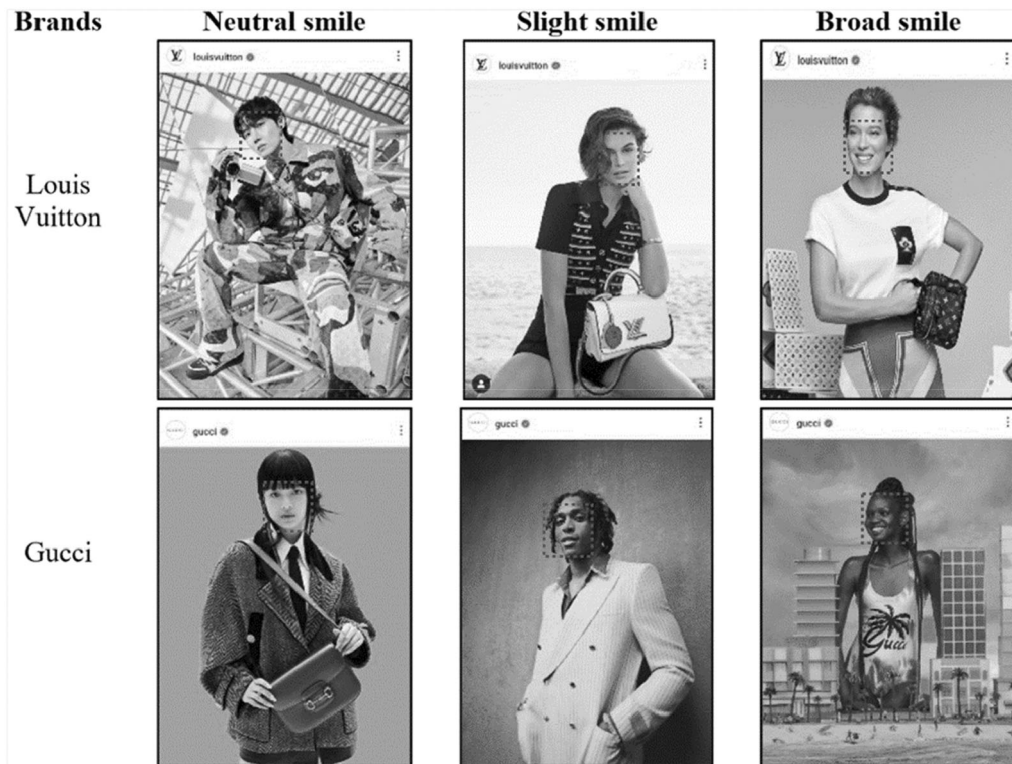


FIGURE 2 | Distribution of smile intensity on Louis Vuitton and Gucci ads.



**FIGURE 3** | Sample smile intensity photos from the Instagram data.

Louis Vuitton, 93 ads were classified as having a neutral expression, 46 with a slight smile, and 68 with a broad smile. Among these, 134 ads featured female models and 73 had male models. In the case of Gucci, 106 ads had a neutral expression, 41 a slight smile, and 81 a broad smile, with 157 showcasing female models and 71 male models. Illustrations of the coded photos are in the Figure 3.

### 3.1.3 | Dependent Variable

Past research has shown that social media metrics and click-through actions are critical in determining advertising success (Ashley and Tuten 2015; Voorveld et al. 2018). Here, we captured the total engagement score (TES) of each print ad, which served as a behavioral proxy (Hulland and Houston 2021) for luxury ad effectiveness. In creating the composite measure of print ad engagement, we derived the TES by aggregating the publicly visible likes and comments. For each post, likes were quantified by determining how many users clicked on the like button, while comments were measured based on the total number of user replies made to a post. This method of measurement is conceptually rigorous, as the two standardized metrics of engagement are intended to reflect similar fundamental drives to interact with a post. Additionally, it is analogous to recent operationalizations that regard Instagram brand engagement as a sum of two focal interactions: likes and comments (Beichert et al. 2023; Karagür et al. 2022). Consequently, the intercoder reliability ratio for TES was notably strong:  $\alpha_{\text{Louis Vuitton}} = 0.99$  and  $\alpha_{\text{Gucci}} = 1.00$ . For a given post, an independent sample *t*-test revealed no significant differences in

the average number of likes ( $M_{\text{Louis Vuitton}} = 58,260.40$ ,  $SD = 47,565.42$  vs.  $M_{\text{Gucci}} = 53,926.32$ ,  $SD = 38,614.96$ ;  $t(433) = 1.04$ ,  $p = 0.29$ ) and comments ( $M_{\text{Louis Vuitton}} = 516.68$ ,  $SD = 403.27$  vs.  $M_{\text{Gucci}} = 472.54$ ,  $SD = 272.45$ ;  $t(433) = 1.35$ ,  $p = 0.17$ ) between brands. This suggests that any variations in TES associated with smile intensity are not attributable to fundamental differences in the post-specific engagement levels of these two brands.

### 3.1.4 | Covariates

To account for external factors that might directly affect TES or interact with smile intensity in predicting TES, we captured a comprehensive set of covariates related to the expresser, brand, and post characteristics. Following the existing online ad effectiveness literature (Özer et al. 2022; To and Patrick 2021; Wang et al. 2018), the recorded variables for each ad were (1) gaze direction<sup>5</sup> (binary), (2) likeability (index), (3) perceived warmth (index), (4) perceived competence (index), (5) gender (binary), (6) ethnicity (binary), (7) celebrity presence (binary), (8) co-branding promotion(s) (binary), (9) total number of characters in captions (continuous), (10) number of hashtags (#) (continuous), and (11) post age (i.e., differences in days between the post date and data collection date) (continuous). For the index variables, we averaged the ratings from 7-point scales into a composite measure to minimize coder bias and subjectivity (see Table 2 for a summary of descriptive statistics and the intercoder agreement scores of covariates). Decisively, we specified the following empirical model and its associated measurement parameters:

**TABLE 2** | Descriptive statistics and Pearson correlations of the Instagram data.

Louis Vuitton (Measurement variables)	$\alpha$ and ICC		Mean	SD	Min	Max	Skewness	Kurtosis	1	2	3	4	5	6	7	8	9	10	11	
	1-Smile intensity	0.94		0.97	0.83	0	2	0.10	-1.07	...										
2-Eye gaze direction	0.96		1.31	0.68	1	2	-0.57	-1.69	.12*	...										
3-Likeability	0.75 <sub>ICC</sub> *		5.19	1.23	1	7	-0.26	-.57	.16*	.09	...									
4-Perceived warmth	0.78 <sub>ICC</sub> *		3.43	1.78	1	7	0.16	-.96	.14*	-.03	.15*	...								
5-Perceived competence	0.83 <sub>ICC</sub> *		4.09	1.56	1	7	-0.20	-.68	-.13*	-.15*	.11*	-.12*	...							
6-Model's gender	1.00		0.64	0.48	0	1	-.60	-1.66	-.06	.06	.12*	.04	.15*	...						
7-Celebrity presence	0.86		0.33	0.47	0	1	.69	-1.54	-.03	.07	.16*	-.06	-.03	.11*	...					
8-Co-branding promotion(s)	0.98		0.11	0.32	0	1	-2.37	3.68	-.07	.04	.07	-.05	.08	.01	.12*	...				
9-Number of captions per post	0.99		20.73	8.30	0	48	.50	.65	.02	.01	.04	.04	.03	.05	.11*	.13*	...			
10-Number of hashtags per post	1.00		2.66	1.94	0	9	1.12	1.31	.05	.03	.05	.02	.04	.03	.13*	.15*	.06	...		
11-Post age	1.00		392.5	201.7	1	1093	-.09	-1.45	-.04	.05	-.01	-.03	.02	-.02	.06	-.04	-.05	.02	...	
<b>Gucci (Measurement variables)</b>	<b><math>\alpha</math> and ICC</b>		<b>Mean</b>	<b>SD</b>	<b>Min</b>	<b>Max</b>	<b>Skewness</b>	<b>Kurtosis</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>	<b>7</b>	<b>8</b>	<b>9</b>	<b>10</b>	<b>11</b>	
1-Smile intensity	0.95		1.07	0.91	0	2	.17	-1.22	...											
2-Eye gaze direction	0.98		1.43	0.88	1	2	-.48	-1.45	.11*	...										
3-Likeability	0.79 <sub>ICC</sub> *		4.95	1.67	1	7	-.33	-.64	.12*	-.05	...									
4-Perceived warmth	0.82 <sub>ICC</sub> *		3.72	1.88	1	7	.29	-.73	.15*	.08	.18*	...								
5-Perceived competence	0.85 <sub>ICC</sub> *		4.21	1.29	1	7	-.16	-.62	-.13*	-.14*	.13*	-.15*	...							
6-Model's gender	1.00		0.69	0.35	0	1	-.52	-1.25	.08	.02	.11*	.12*	.14*	...						
7-Celebrity presence	0.91		0.27	0.54	0	1	.57	-1.21	-.06	.05	.12*	.03	-.05	.13*	...					
8-Co-branding promotion(s)	0.99		0.14	0.36	0	1	-2.39	3.52	.03	-.06	.02	.08	.04	-.03	.11*	...				
9-Number of captions per post	0.97		15.62	7.49	0	45	.33	.47	.04	.03	.05	-.05	.06	.06	.08	.15*	...			
10-Number of hashtags per post	0.99		2.37	1.72	0	11	.86	1.12	.02	-.02	.04	.01	.01	.05	.14*	.12*	.08	...		
11-Post age	1.00		448.1	221.6	1	1095	-.69	-1.92	-.01	.05	-.02	-.04	.05	.04	.02	-.07	-.06	-.04	...	

Note: (†) \* $p < 0.05$  (two-tailed), SD = Standard deviation,  $N_{Louis}$   $N_{Louis} = 201$ ,  $N_{Gucci} = 224$ .  
 (‡)  $\alpha$ : Interclass reliability score, ICC: Intraclass correlation coefficient.

TABLE 3 | OLS regression estimates of the Instagram data.

Explanatory variables	Louis Vuitton (N = 201)			Gucci (N = 224)			Combined Model 4 (N = 425)
	Model 1 (Covariates)	Model 2 (Main effect)	Model 3 (Full model)	Model 1 (Covariates)	Model 2 (Main effect)	Model 3 (Full model)	
<b>Main effect</b>							
(●) Smile intensity	...	-0.23***	-0.21***	...	-0.29***	-0.26***	-0.24***
<b>Interaction effects</b>							
(●) Smile intensity × Eye gaze direction	...	...	-0.17***	...	...	-0.18***	-0.19***
(●) Smile intensity × Likeability	...	...	0.06 <sup>n.s</sup>	...	...	0.07 <sup>n.s</sup>	0.05 <sup>n.s</sup>
(●) Smile intensity × Perceived warmth	...	...	0.08 <sup>n.s</sup>	...	...	0.06 <sup>n.s</sup>	0.07 <sup>n.s</sup>
(●) Smile intensity × Perceived competence	...	...	-0.05 <sup>n.s</sup>	...	...	-0.07 <sup>n.s</sup>	-0.06 <sup>n.s</sup>
(●) Smile intensity × Gender	...	...	-0.04 <sup>n.s</sup>	...	...	-0.05 <sup>n.s</sup>	-0.06 <sup>n.s</sup>
(●) Smile intensity × Ethnicity	...	...	0.03 <sup>n.s</sup>	...	...	0.02 <sup>n.s</sup>	0.04 <sup>n.s</sup>
(●) Smile intensity × Celebrity presence	...	...	-0.06 <sup>n.s</sup>	...	...	-0.04 <sup>n.s</sup>	-0.08 <sup>n.s</sup>
(●) Smile intensity × Co-branding promotion(s)	...	...	-0.05 <sup>n.s</sup>	...	...	-0.07 <sup>n.s</sup>	-0.05 <sup>n.s</sup>
<b>Expresser-related covariates</b>							
(●) Eye gaze direction (d)	-0.04 <sup>n.s</sup>	-0.05 <sup>n.s</sup>	-0.06 <sup>n.s</sup>	-0.06 <sup>n.s</sup>	-0.08 <sup>n.s</sup>	-0.09 <sup>n.s</sup>	-0.07 <sup>n.s</sup>
(●) Likeability (i)	0.10 <sup>n.s</sup>	0.09 <sup>n.s</sup>	0.08 <sup>n.s</sup>	0.08 <sup>n.s</sup>	0.10 <sup>n.s</sup>	0.10 <sup>n.s</sup>	0.09 <sup>n.s</sup>
(●) Perceived warmth (i)	0.06 <sup>n.s</sup>	0.05 <sup>n.s</sup>	0.05 <sup>n.s</sup>	0.07 <sup>n.s</sup>	0.09 <sup>n.s</sup>	0.10 <sup>n.s</sup>	0.08 <sup>n.s</sup>
(●) Perceived competence (i)	0.05 <sup>n.s</sup>	0.07 <sup>n.s</sup>	0.06 <sup>n.s</sup>	0.04 <sup>n.s</sup>	0.05 <sup>n.s</sup>	0.09 <sup>n.s</sup>	0.08 <sup>n.s</sup>
(●) Gender (d)	-0.19***	-0.21***	-0.23***	-0.11*	-0.12*	-0.14**	-0.16**
(●) Ethnicity (d)	0.01 <sup>n.s</sup>	0.02 <sup>n.s</sup>	0.04 <sup>n.s</sup>	0.03 <sup>n.s</sup>	0.05 <sup>n.s</sup>	0.06 <sup>n.s</sup>	0.04 <sup>n.s</sup>
<b>Post and brand-related covariates</b>							
(●) Celebrity presence (d)	0.14**	0.15**	0.16**	0.21***	0.23***	0.24***	0.16**
(●) Co-branding promotion(s) (d)	0.23***	0.19***	0.20***	0.15**	0.16**	0.16**	0.15**
(●) Number of characters in captions per post (l)	0.08 <sup>n.s</sup>	0.06 <sup>n.s</sup>	0.04 <sup>n.s</sup>	0.07 <sup>n.s</sup>	0.08 <sup>n.s</sup>	0.08 <sup>n.s</sup>	0.06 <sup>n.s</sup>
(●) Number of hashtags per post (l)	0.05 <sup>n.s</sup>	0.04 <sup>n.s</sup>	0.03 <sup>n.s</sup>	0.08 <sup>n.s</sup>	0.07 <sup>n.s</sup>	0.09 <sup>n.s</sup>	0.10 <sup>n.s</sup>
(●) Post age (l)	-0.06 <sup>n.s</sup>	-0.08 <sup>n.s</sup>	-0.07 <sup>n.s</sup>	-0.07 <sup>n.s</sup>	-0.10 <sup>n.s</sup>	-0.09 <sup>n.s</sup>	-0.08 <sup>n.s</sup>
<b>Fit and performance metrics</b>							
Adjusted R <sup>2</sup>	0.272	0.323	0.361	0.291	0.359	0.422	0.394
ΔR <sup>2</sup>	...	0.051	0.038	...	0.068	0.063	...
Largest VIF	1.98	2.19	2.35	2.12	2.41	2.76	2.68

(Continues)

TABLE 3 | (Continued)

Explanatory variables	Louis Vuitton (N = 201)			Gucci (N = 224)			Combined Model 4 (N = 425)
	Model 1 (Covariates)	Model 2 (Main effect)	Model 3 (Full model)	Model 1 (Covariates)	Model 2 (Main effect)	Model 3 (Full model)	
Collinearity tolerance	0.84	0.88	0.94	0.89	0.93	0.96	0.95
F-value	22.36	27.49	30.85	23.56	29.12	34.58	31.25
Prob > F	***	***	***	***	***	***	***
LL	-3561	-3532	-3496	-3509	-3465	-3389	-3412
AIC	7182	7136	7086	7073	7018	6872	6973
BIC	7210	7174	7148	7101	7056	6934	7015

DV (TES)	Louis Vuitton			Gucci			Combined Model 4 TES
	Comments	Likes	TES	Comments	Likes	TES	
Mean (SD)	58,260.40 (47,565.42)	516.68 (403.27)	58,777.08 (47,758.05)	53,926.32 (38,614.96)	472.54 (272.45)	54,398.86 (38,801.22)	56,742.97 (42,280.63)

(†) TES = Total engagement score (number of likes + comments per post) is the focal DV in all models. (d) = Dichotomous variables. (i) = Index variables. (l) = Log-transformed due to non-normal distributions. VIF = Variance inflation factor. LL = Log-likelihood. AIC = Akaike information criteria. BIC = Bayesian information criteria. SD = Standard deviation. N = Total number of final observations (collected online print ads).  
 (‡) \*\*\*p < 0.001 (t-value ± 3.29), \*\*p < 0.01 (t-value ± 2.58), \*p < 0.05 (t-value ± 1.96), n.s = not significant effect (all two-tailed).  
 (§) The combined model represents the full data merging Louis Vuitton and Gucci observations

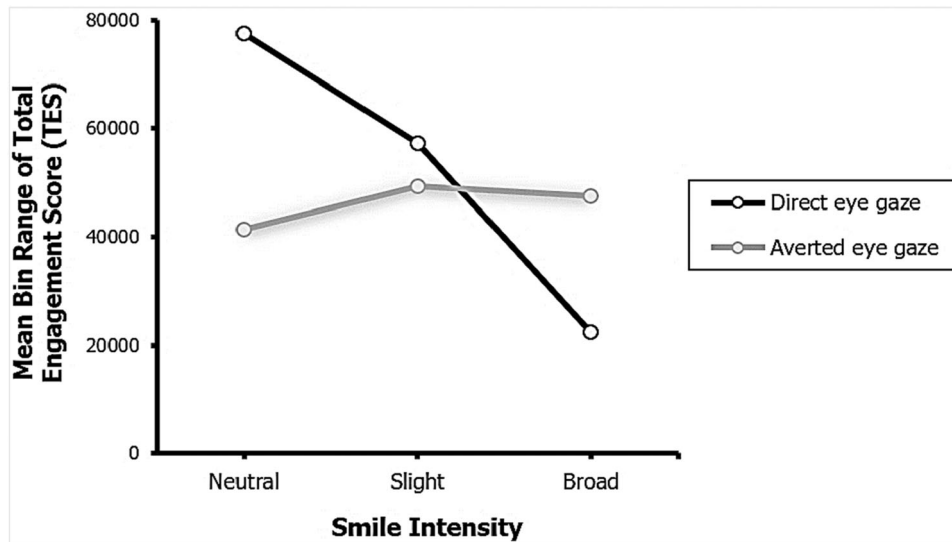
$$\begin{aligned}
 \text{TES} \left( \sum_{i=1}^{435} \text{likes and comments} \right) t = & \beta_0 \text{ (constant)} \\
 & + \beta_1 \text{ smile intensity}_{i,t} (0 = \text{neutral}, 1 = \text{slight}, 2 = \text{broad}) \\
 & + \beta_2 \text{ gaze direction}_{i,t} (1 = \text{direct}, 2 = \text{averted}) \\
 & + \beta_3 \text{ gaze direction}_{i,t} \times \text{smile intensity}_{i,t} \\
 & + \beta_4 \text{ likeability}_{i,t} (\text{“likeable; empathic; nice”}; \\
 & 1 = \text{not at all}, 7 = \text{very well}) + \beta_5 \text{ likeability}_{i,t} \\
 & \times \text{smile intensity}_{i,t} + \beta_6 \text{ perceived warmth}_{i,t} \\
 & (\text{“approachable; open; warm”}; 1 = \text{not at all}, \\
 & 7 = \text{very well}) + \beta_7 \text{ perceived warmth}_{i,t} \\
 & \times \text{smile intensity}_{i,t} + \beta_8 \text{ perceived competence}_{i,t} \\
 & (\text{“capable; competent”}; 1 = \text{not at all}, 7 = \text{very well}) \\
 & + \beta_9 \text{ perceived competence}_{i,t} \times \text{smile intensity}_{i,t} \\
 & + \beta_{10} \text{ gender}_{i,t} (0 = \text{male}, 1 = \text{female}) + \beta_{11} \text{ gender}_{i,t} \\
 & \times \text{smile intensity}_{i,t} + \beta_{12} \text{ ethnicity}_{i,t} (0 = \text{non - white}, \\
 & 1 = \text{white}) + \beta_{13} \text{ ethnicity}_{i,t} \times \text{smile intensity}_{i,t} \\
 & + \beta_{14} \text{ celebrity presence}_{i,t} (0 = \text{no celebrity}, \\
 & 1 = \text{celebrity present}) + \beta_{15} \text{ celebrity presence}_{i,t} \\
 & \times \text{smile intensity}_{i,t} + \beta_{16} \text{ co-branding promotion (s)}_{i,t} \\
 & (0 = \text{no co - branding}, 1 = \text{co - branding present}) \\
 & + \beta_{17} \text{ co-branding promotion(s)}_{i,t} \times \text{smile intensity}_{i,t} \\
 & + \beta_{18} (\ln) \text{total number of characters in captions per post}_{i,t} \\
 & + \beta_{19} (\ln) \text{number of hashtags (\#) per post}_{i,t} \\
 & + \beta_{20} (\ln) \text{post age (in days)}_{i,t} + \varepsilon_{i,t} \text{ (error)},
 \end{aligned} \tag{1}$$

where subscript  $i$  denotes the  $i^{\text{th}}$  brands' print ads (Louis Vuitton® or Gucci®) in year  $t$  (2020 to 2023),  
 (ln) = log - transformed, and  
 “ × ” represents the interaction term

### 3.2 | Results

To estimate the specified model in Equation (1), we ran a series of OLS regressions, given that our dependent variable is of a continuous nature. Results are shown in Table 3, following a three-stage hierarchical modeling approach for both brands. First, we presented only the OLS estimates of the covariates (Model 1), then progressed to include the covariates along with the main smile intensity effect (Model 2), and finally reported the covariates, the main effect, and their interactions (Model 3). Since the data for Louis Vuitton and Gucci exhibited a similar pattern of results, we additionally presented a combined model that merges both datasets (Model 4). We standardized the dummy covariates to control for extremely small coefficients and applied heteroskedasticity-consistent robust standard errors in each model presented. Concurrently, we excluded a total of ten outliers that were more than 3 SD above the mean for TES. This action was taken to control viral posts with substantial engagement levels, which might otherwise skew the effect sizes.





**FIGURE 4** | The interaction effect of smile intensity and eye gaze direction on total engagement score.

For all models, the collinearity tolerances exceeded 0.80, and the VIFs ranged from 1.23 to 2.76, which are well within the acceptable threshold ( $\leq 3$ ) (Sarstedt et al. 2022). Furthermore, the correlations between the covariates and smile intensity were under ( $r < 0.17$ ) for Louis Vuitton and less than ( $r < 0.19$ ) for Gucci, indicating weak or small associations (Cohen 2013) (Table 2). Therefore, it is implausible that multicollinearity poses a risk to the interpretation of our results. Regarding predictive relevance, our analysis indicates that Model 3 ( $F(11, 189)_{\text{Louis Vuitton}} = 30.85, p < 0.001$ ;  $F(11, 212)_{\text{Gucci}} = 34.58, p < 0.001$ ) is superior for both brands, evidenced by its higher adjusted  $R^2$  ( $0.36_{\text{Louis Vuitton}}$  and  $0.42_{\text{Gucci}}$ ), increased log-likelihood, along with lower Akaike and Bayesian information criteria (Vrieze 2012). Model fit and performance metrics are detailed in Table 3.

In relation to the main effect, smile intensity was negatively related to TES ( $\beta_{\text{Louis Vuitton (Model 2)}} = -0.23, p < 0.001$ ;  $\beta_{\text{Gucci (Model 2)}} = -0.29, p < 0.001$ ), suggesting that more intense smiles were less effective in garnering ad engagement. This supports  $H_1$ . In a follow-up test, we ran a one-way ANOVA on the combined data and found a significant effect of smile intensity on TES ( $F(2, 422) = 22.17, p < 0.001, \eta_p^2 = .13$ ). Pairwise comparisons showed that print ads featuring neutral expressions ( $M_{\text{neutral}} = 64,220.05, SD = 45,102.87$ ) and slight smiles<sup>6</sup> ( $M_{\text{slight}} = 60,947.15, SD = 43,576.29$ ) resulted in higher TES than those with broad smiles ( $M_{\text{broad}} = 36,125.73, SD = 24,931.58; p_{\text{neutral vs. broad}} < 0.001, p_{\text{slight vs. broad}} < 0.001$ ). Concerning the discrete weights of likes and comments on TES, we performed a robustness test by operationalizing likes rate ( $\frac{\# \text{ of likes (per ad)}}{\text{follower count}}$ ) and comments rate ( $\frac{\# \text{ of comments (per ad)}}{\text{follower count}}$ ) as two separate dependent variables within supplementary OLS models. These alternative checks similarly revealed a negative effect of smile intensity on likes rate ( $\beta_{\text{Louis Vuitton}} = -0.20, p < 0.001$ ;  $\beta_{\text{Gucci}} = -0.25, p < 0.001$ ) and comments rate ( $\beta_{\text{Louis Vuitton}} = -0.22, p < 0.001$ ;  $\beta_{\text{Gucci}} = -0.27, p < 0.001$ ).

Next, we observed a significant interaction effect between gaze direction and smile intensity ( $\beta_{\text{Louis Vuitton (Model 3)}} = -0.17, p < 0.001$ ;  $\beta_{\text{Gucci (Model 3)}} = -0.18, p < 0.001$ ;  $\beta_{\text{(Combined Model 4)}} = -0.19, p < 0.001$ ). Figure 4 presents the interaction plot.

Probing this interaction further, print ads featuring a direct gaze paired with a neutral expression (vs. broad) smile achieved significantly higher TES ( $M_{\text{direct-neutral}} = 78,412.63, SD = 59,518.45$  vs.  $M_{\text{direct-broad}} = 40,695.19, SD = 27,310.87$ ;  $t(278) = 6.83, p < 0.001$ ). Conversely, averted gaze led to higher TES when coupled with a broad smile (vs. neutral expression) ( $M_{\text{averted-broad}} = 43,672.73, SD = 31,208.16$  vs.  $M_{\text{averted-neutral}} = 21,591.02, SD = 13,947.54$ ;  $t(153) = 5.55, p < 0.001$ ). This offers preliminary support for  $H_{4a}$ . No other significant interaction effects were observed between smile intensity and the studied covariates ( $ps_{\text{Louis Vuitton (Model 3)}} \geq 0.10, ps_{\text{Gucci (Model 3)}} \geq 0.11$ ).

Pertaining to the direct effects of covariates, the results showed that TES was adversely impacted by female expressers ( $\beta_{\text{Louis Vuitton (Model 1)}} = -0.19, p < 0.001$ ;  $\beta_{\text{Gucci (Model 1)}} = -0.11, p < 0.05$ ), while it was positively influenced by the presence of a celebrity ( $\beta_{\text{Louis Vuitton (Model 1)}} = 0.14, p < 0.01$ ;  $\beta_{\text{Gucci (Model 1)}} = 0.21, p < 0.001$ ) and co-branding promotions ( $\beta_{\text{Louis Vuitton (Model 1)}} = 0.23, p < 0.001$ ;  $\beta_{\text{Gucci (Model 1)}} = 0.15, p < 0.01$ ). Together, this suggests that featuring a greater number of male expressers, including celebrities, and applying co-branding promotions can contribute to higher engagement scores. In the meantime, we did not detect direct effects of gaze direction, perceived likeability, warmth, competence<sup>7</sup>, ethnicity, the number of captions, hashtags, and post age on TES ( $ps_{\text{Louis Vuitton (Model 1)}} \geq 0.09, ps_{\text{Gucci (Model 1)}} \geq 0.08$ ). Most importantly, the focal smile intensity effect on TES remained unchanged after controlling for these covariates ( $\beta_{\text{Louis Vuitton (Model 3)}} = -0.21, p < 0.001$ ;  $\beta_{\text{Gucci (Model 3)}} = -0.26, p < 0.001$ ;  $\beta_{\text{(Combined Model 4)}} = -0.24, p < 0.001$ ). Here, we achieved a *post-hoc* power level of 0.99 (Faul et al. 2009).

### 3.3 | Additional Post-Hoc Evidence for Ad Engagement: A Textual Analysis

To provide supplementary evidence for  $H_1$ , we analyzed the comments of both followers and non-followers of Louis Vuitton

and Gucci. We collected a total of 17,645 English<sup>8</sup> comments (8732<sub>neutral expression ads</sub> vs. 8913<sub>broad smile ads</sub>) using the comment scraper tool publicly available on [apify.com/apify/instagram-comment-scraper](https://apify.com/apify/instagram-comment-scraper). Given the consistent patterns observed in the results reported above, we created a merged dataset for both brands. Prior to analysis, all emojis (e.g., ❤️, 🤔, 🍌, ✨, 🍌), tags, and junk words, such as “a, an, the” were removed from the dataset, as they were deemed non-contributory to the text’s meaning (Özer et al. 2022). Accordingly, we utilized the Linguistic Inquiry and Word Count (LIWC-22) statistical package, developed by Boyd et al. (2022), which is widely used in marketing research (Beichert et al. 2023; Oc et al. 2023).

LIWC is a prominent tool for categorizing text files and measures the frequency of psychological processes in the text, which designate various drives, states, motives, and individual perceptions. It examines each post and identifies target words one by one. Our ancillary analysis specifically focused on ten key LIWC dimensions<sup>9</sup>: (1) affiliation, (2) authenticity, (3) achievement, (4) power, (5) need, (6) want, (7) curiosity, (8) allure, (9) attention, and (10) visual. In parallel with works of literature on social media advertising (Chen and Wyer 2020; Voorveld et al. 2018) and the stereotype content model (Fiske, Cuddy, and Glick 2007, 2002), these dimensions were chosen for their relevance to post-engagement. Consequently, we aimed to explore the disparity in the number of comments received by ads featuring neutral expressions versus broad smiles across these psycholinguistic variables.

Markedly, we found that neutral expression ads received significantly more comments on LIWC dimensions—affiliation ( $M_{\text{neutral}} = 32.16$  vs.  $M_{\text{broad}} = 28.79$ ;  $t(17,643) = 6.13$ ,  $p < 0.001$ ), authenticity ( $M_{\text{neutral}} = 64.25$  vs.  $M_{\text{broad}} = 60.93$ ;  $t(17,643) = 3.17$ ,  $p < 0.01$ ), achievement ( $M_{\text{neutral}} = 74.82$  vs.  $M_{\text{broad}} = 69.94$ ;  $t(17,643) = 3.67$ ,  $p < 0.001$ ), power ( $M_{\text{neutral}} = 70.76$  vs.  $M_{\text{broad}} = 65.82$ ;  $t(17,643) = 3.91$ ,  $p < 0.001$ ), need ( $M_{\text{neutral}} = 27.84$  vs.  $M_{\text{broad}} = 25.81$ ;  $t(17,643) = 5.79$ ,  $p < 0.001$ ), want ( $M_{\text{neutral}} = 28.42$  vs.  $M_{\text{broad}} = 22.43$ ;  $t(17,643) = 13.87$ ,  $p < 0.001$ ), curiosity ( $M_{\text{neutral}} = 26.68$  vs.  $M_{\text{broad}} = 25.66$ ;  $t(17,643) = 2.49$ ,  $p < 0.05$ ), allure ( $M_{\text{neutral}} = 207.64$  vs.  $M_{\text{broad}} = 191.87$ ;  $t(17,643) = 5.71$ ,  $p < 0.001$ ), attention ( $M_{\text{neutral}} = 33.06$  vs.  $M_{\text{broad}} = 30.17$ ;  $t(17,643) = 5.04$ ,  $p < 0.001$ ), and visual ( $M_{\text{neutral}} = 66.12$  vs.  $M_{\text{broad}} = 59.94$ ;  $t(17,643) = 7.96$ ,  $p < 0.001$ ). This denotes that print ads with neutral expressions (vs. broad smiles) led to a greater level of comment engagement. The higher prevalence of affiliation, authenticity, achievement, and power-associated words in neutral expression ads signals the likelihood that neutral facial expressions may result in enhanced competence judgments. Nonetheless, we will more thoroughly test this possibility in Study 3.

### 3.4 | Discussion

Study 1 demonstrated the negative impact of smile intensity on luxury ad effectiveness. Consistent with our predictions, print ads displaying neutral expressions enhanced TES. Furthermore, these ads received more comments on all LIWC-22 dimensions, which are closely intertwined with TES. By focusing on two separate luxury brands, we safeguarded that the observed effect

was not confined to a single brand. In addition, we observed support for the moderating role of gaze direction. In combination, results of this study inform subsequent studies by identifying the need to test these relationships in more controlled experimental settings to establish causality.

One notable limitation of this study was the impracticality of classifying the diversity of luxury products featured in collected ads. Contextually, this hindered our understanding of whether the detrimental effect of smile intensity is generalizable across different types of luxury consumption categories (Zhu et al. 2022). Moreover, we were unable to gather demographic data (e.g., age, gender, ethnicity) of users who engaged with these posts due to the privacy policies of Instagram. This raises questions about whether the observed effect can hold across these demographic groups. Finally, self-selection bias and endogeneity remain a risk to our field data. It was beyond our control whether these brands displayed our ads on their websites or other social media platforms (e.g., YouTube), which could potentially drive traffic across platforms and indirectly affect TES. In what follows, we addressed these concerns.

## 4 | Study 2a: Testing the Main Effect in Meta Ads

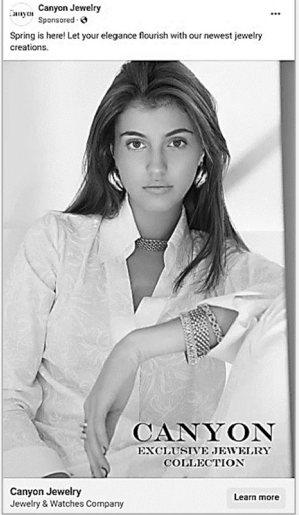

While Study 1 offered preliminary evidence on the main effect, its correlational nature restricted causality and the ecological validity of our predictions. To provide additional extrapolation for  $H_1$  and enhance the practical relevance of our findings, we conducted a field study in a naturalistic setting using Meta’s Ads Manager ([facebook.com/business/tools/ads-manager](https://facebook.com/business/tools/ads-manager)). This platform is extensively used by luxury brands for their advertising campaigns and offers diverse rhetorical advantages to consumer researchers focused on examining managerially relevant outcome variables, such as online ad engagement (see Orazi and Johnston 2020, pp.190-191 for the advantages of Meta experiments). In this study, we captured two real-time performance proxies to evaluate luxury ad effectiveness: (1) click-through rates (CTRs) and (2) cost-per-clicks (CPCs), moving beyond self-reported intentions which can be influenced by social desirability response bias (Essiz and Senyuz 2024). This study was preregistered: [aspredicted.org/blind.php?x=N9K\\_3MG](https://aspredicted.org/blind.php?x=N9K_3MG).

### 4.1 | Method

#### 4.1.1 | Stimuli Development

We developed two versions of an ad, each featuring images of an expresser with two distinct facial expressions: a neutral expression and a broad smile. Originally, we purchased a licensed stock image from [istockphoto.com](https://istockphoto.com), a global online photography provider. This image showcased a Caucasian female model adorned with luxury jewelry and exhibiting a neutral expression. The facial expression of the selected expresser was identical to the level 1 smile intensity (neutral expression stimulus set) in the AMFD (Chen, Norman, and Nam 2021). To generate a version with a broad smile, we complied with the level 5 smile intensity criteria, employing the broad smile creation procedure delineated by Cheng, Mukhopadhyay and Williams (2020). We digitally morphed and calibrated the original neutral expression image using FaceApp Pro

TABLE 4 | Results of the first Meta field study.

Single-factor design (A/B testing)	Neutral expression ad stimulus condition	Broad smile ad stimulus condition
Stimuli pictures		
<b>Descriptives of participants and ad performance metrics</b>		
Gender	Female: 100%, Male: 0%	Female: 100%, Male: 0%
Reach (i.e., different users exposed to ads) ( $N_{\text{total}} = 161,643$ )	81,281	80,362
Reach by age groups	18–24 = 39,015 25–34 = 21,945 35–44 = 6502 45–54 = 4882 55–64 = 4564 65+ = 4373	18–24 = 34,557 25–34 = 24,913 35–44 = 5625 45–54 = 4018 55–64 = 4821 65+ = 6428
Impressions (i.e., the total number of exposures to ads)	81,368	80,519
Frequency	1.0010	1.0019
Number of ad clicks	1181 [1176]	795 [791]
Expenditure (i.e., budget: amount spent)	€176.63	€176.52
CTR (%)	1.446	0.984
CPC	€0.15	€0.22

(†) CTR = Click-through rate =  $\left(\frac{\text{Number of ad clicks}}{\text{Reach}}\right) \times 100$ , CPC = Cost-per click =  $\left(\frac{\text{Expenditure}}{\text{Number of ad clicks}}\right)$ , Frequency =  $\left(\frac{\text{Impressions}}{\text{Reach}}\right)$ . Clicks presented in brackets indicate correction based on frequency.

(**faceapp.com**), a facial editing software, in which we opted for the “wide smile” feature. To correct any distortions or blurriness resulting from this morphing process, Adobe Photoshop (**adobe.com**) was utilized (see Table 4 for the stimuli developed). Throughout the paper, this morphing procedure was homogeneously applied, apart from the supplementary study that utilized the expresser’s natural smile poses.

Extant literature (Abel and Kruger 2010; Wang et al. 2017) has ascertained that smile intensity is physically manifested by the activity of a specific facial muscle unit, the zygomaticus major (AU12), responsible for elevating the corners of the lips. This action is accompanied by the elevation of the cheeks and the

contraction of the outer corners of the eyes, a function of the orbicularis oculi muscle unit (AU6). To safeguard the face validity of our stimuli, we invited six marketing PhDs to examine these muscle action units, AU12 and AU6, as benchmarks in two ads. Higher levels of these units are indicative of positive facial expressions. Following Ekman and Friesen’s (1978) facial action coding system, we instructed them to rate the intensity of each muscle action on a 5-point scale, with 1 being minimal and 5 being extreme. The smile intensity score was calculated by averaging the ratings of AU12 and AU6. The mean score for the neutral expression ad was 1.37 (SD = 0.51), while for the broad smile ad, it was 4.37 (SD = 0.74). Based on this tangent, the smiles in our two ads differed only in degrees

of AU12 and AU6, resulting in either neutral expression or broad smile.

Aside from this, all other visual aspects of the expresser, such as attire, direction of the gaze, eyebrow positioning, and head orientation (Min and Hu 2022), were consistently uniform across both conditions. Heeding the advice of Zhu et al. (2022), we converted all the stimuli developed in this research to black and white and standardized their size to eliminate potential confounding factors, such as variations in skin and clothing colors. Likewise, the ad background was kept plain and neutral to prevent any distractions. In both versions of the ad, we used the same tagline: “*Exclusive Jewelry Collection*” to heighten perceptions of status and visibility. Yet, we refrained from disclosing pricing information to ensure it did not affect the judgments of observers.

#### 4.1.2 | Pretest of the Stimuli

We conducted a separate pretest using Prolific (**prolific.com**), a commercial crowdsourcing platform, to further evaluate the validity of our manipulation and dismiss potential expresser-related confounds. For all pretests and experiments reported in this paper, Prolific was chosen for its ability to provide access to our target population and its rigorous data quality protocols<sup>10</sup>. To mitigate potential internal validity threats, we employed a purposive sampling method and pre-screened participants who have regular luxury consumption habits. In alignment with the audience criteria for our field study, we implemented three screening protocols: (1) nationality: US, (2) gender: female, and (3) a minimum approval rate of 99%.

Surpassing our preregistration, we recruited 72 participants ( $M_{\text{age}} = 28.34$ ,  $SD = 8.16$ , compensation = \$0.30<sub>per individual</sub>) for a pictorial evaluation task. These participants were randomly assigned to a two-cell (smile intensity: neutral vs. broad) between-subjects design. Given the palpable influence of smiles on model personality assessments and ad-related judgments (Wang et al. 2017; Yao et al. 2022), they proceeded to rate the expresser's smile strength (as a manipulation check), the authenticity of the smile expression, facial attractiveness, trustworthiness of the smile, perceived competence, perceived warmth, perceived prestige, ad realism, and brand's perceived luxury as single-item confound checks in a counterbalanced order. These ratings were based on 5-point scales. They were also asked to complete a single-item attention check: Is the model featured in this ad smiling or not smiling? (1 = smiling, 2 = not smiling).

#### 4.1.3 | Pretest Results

As a result of the attention check, a cross-tabulation analysis uncovered that every participant accurately identified whether the model was smiling or not based on the condition (neutral expression vs. broad smile) they were assigned. As predicted, independent  $t$ -test results showed that the neutral expression (vs. broad) smile received significantly lower ratings on perceived smile strength ( $M_{\text{neutral}} = 1.06$ ,  $M_{\text{broad}} = 3.94$ ;  $t(70) = -23.42$ ,  $p < 0.001$ ), perceived warmth ( $M_{\text{neutral}} = 2.33$ ,  $M_{\text{broad}} = 3.82$ ;  $t(70) = -5.55$ ,  $p < 0.001$ ), and higher ratings of perceived competence ( $M_{\text{neutral}} = 3.44$ ,  $M_{\text{broad}} =$

$2.06$ ;  $t(70) = 5.14$ ,  $p < 0.001$ ), perceived prestige ( $M_{\text{neutral}} = 4.19$ ,  $M_{\text{broad}} = 3.55$ ;  $t(70) = 2.27$ ,  $p < 0.05$ ). These findings supported the success of our stimuli for further investigations. Besides, ratings of authenticity of the smile expression, facial attractiveness, trustworthiness of the smile, ad realism, and brand's perceived luxury did not significantly differ across the two smile intensity conditions ( $ps \geq 0.68$ ). Notably, participants reported higher perceived luxury of the promoted brand in both conditions ( $M_{\text{neutral}} = 4.32$ ,  $M_{\text{broad}} = 4.24$ ;  $t(70) = 0.33$ ,  $p = 0.76$ ; difference from the scale midpoint:  $t(71) = 3.75$ ,  $p < 0.001$ ).

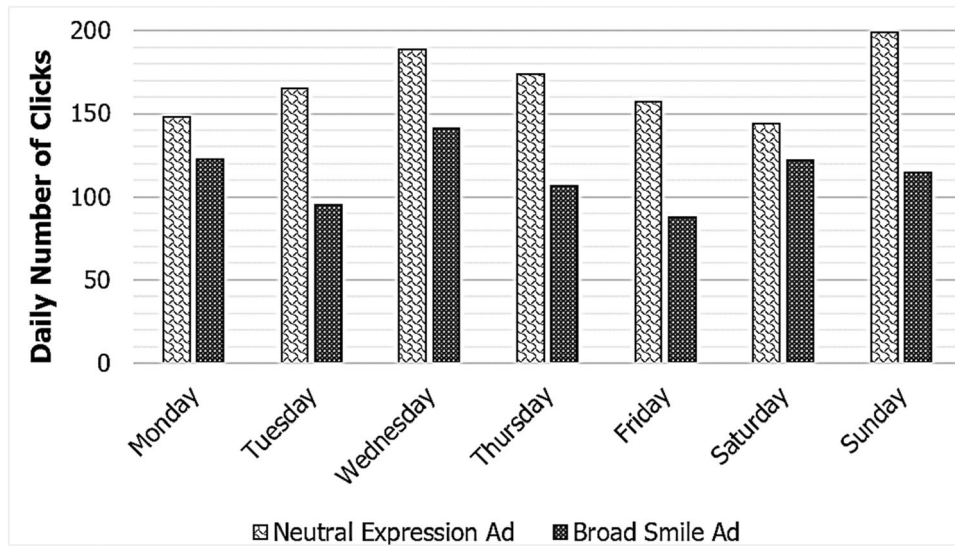
#### 4.1.4 | Procedure and Design of the Meta Study

This multiple-ad study employed a single-factor (neutral expression vs. broad smile) between-subjects design. We used Meta's A/B split testing functionality, which randomly allocated users to one of the two ad conditions. Our objective was to evaluate which ad version outperformed the other while making sure that the users were evenly spread and statistically comparable between the two groups. To maintain consistency across all other elements, except for the smile intensity degree in ads, we set the following campaign parameters: (1) campaign objective: drive traffic, (2) performance target: maximize the number of clicks, (3) bidding strategy: highest volume, (4) location targeting: US, (5) language preference: English, (6) device compatibility: all devices, and (7) detailed targeting: individuals interested in luxury goods, jewelry, and advertising. Considering the promoted product's nature (women's jewelry)<sup>11</sup> and the gender of the expresser (woman), our campaign specifically targeted female observers aged 18 and above as the unit of analysis. The purpose of this gender-matching protocol was to mitigate potential confounding threats, such as tendencies towards romance or desire-driven responses, which might be discreetly influenced by the intensity of the expresser's smile involving opposite-gender pairings (e.g., a female expresser and a male observer) (To and Patrick 2021).

In September 2023, we launched both ads for Canyon, a fictitious luxury jewelry brand, aiming to obtain unique CTRs<sup>12</sup> for the targeted ads. The use of a fictional brand name was a methodological choice to cleanly segregate the effects of manipulations from the potential interference of pre-existing brand recognition and equity<sup>13</sup> (Holden and Vanhuele 1999). We prescheduled the campaign's duration to ensure both ads were evaluated over an identical timeframe. The ads ran parallelly and continuously for 7 days (168 h), starting and ending at 12:00 a.m. EST. The total budget for the week, set at €354, was equally allocated to both conditions. Our budget allowance guaranteed at least a total reach of  $\approx 160,750$  users and an aggregated minimum of  $\approx 1810$  click-throughs across both ads through a power analysis by Meta's targeting algorithms. When users clicked the “*Learn More*” button on the ads, they were directed to a mock page, which featured the same ads and offered details about the scientific purpose of campaigns. Of note, we collected data on the age of users to control it as a covariate.

## 4.2 | Results

Via Meta Ads Manager, we monitored both the number of reach (i.e., different users exposed to ads) and the number of clicks for



**FIGURE 5** | Weekly breakdown of Meta ad clicks across smile intensity conditions.

each campaign. Our ads reached a total number of 161,643 unique users ( $Reach_{neutral} = 81,281$ ,  $Reach_{broad} = 80,362$ ). The total number of clicks for the neutral expression ad was 1176, while the ad with a broad smile garnered 791 clicks (see Figure 5 for the daily distribution of ad clicks spanning a 7-day period). CTRs for both conditions ( $CTR_{neutral} = 1.446\%$ ,  $CTR_{broad} = 0.984\%$ ) outperformed the average range for Meta ads. This is in line with the standard benchmark of 0.90% for business ads (Irvine 2024), signaling that our ads were comparable in appeal and focus to other Meta ads. A chi-square test with one degree of freedom showed a significant difference in proportions,  $\chi^2(1) = 71.91$ ,  $p < 0.001$ . Critically, the neutral expression ad achieved a higher CTR (1.446%) than the broad smile ad (0.984%).

Furthermore, the CPC represents the ratio of total expenditure in each ad condition to the total number of clicks it generates (Orazi and Johnston 2020). Since the ad expenditure is equivalent across conditions, a relatively lower CPC in one condition can serve as an indicator of ad effectiveness. The CPC for the neutral expression ad was €15, whereas it was €22 for the broad smile ad, suggesting higher cost-efficiency for the neutral expression ad. Table 4 displays the detailed results from this study.

To ensure the robustness of our results, we performed a binary logistic regression analysis after establishing a simulated dataset with smile intensity (1 = neutral, 0 = broad), age group (6 separate dummy indicators), their interaction as independent variables, and click-counts (1 = click, 0 = no click) as the dependent variable. The results corroborated the significant main effect; there was a positive influence for the neutral expression condition on click counts ( $\beta = 0.40$ ,  $SE = 0.04$ , Wald  $\chi^2(1) = 74.81$ ,  $p < 0.001$ ;  $Exp(\beta) = 1.49$  (odds ratio: OR),  $CI_{95\%}$ ,  $Exp(\beta) = [1.36, 1.63]$ ). Strictly speaking, observers who saw the ad with a neutral expression were 1.49 times more likely to click on it compared to those who were exposed to the ad with a broad smile. We accounted for the smile intensity  $\times$  age interaction to control age-related effects. This interaction was found to be non-significant ( $p = 0.19$ ), indicating that the observed effect was robust across all age groups listed in Table 4. No main effect of age on click-counts was observed

( $\beta = 0.03$ ,  $p = 0.14$ ). Together, we achieved a *post-hoc* power level of 0.99 for the above analysis (Faul et al. 2009).

### 4.3 | Discussion

Study 2a provided robust field support backing  $H_1$ . We unpacked that a luxury ad featuring the expresser with a neutral expression (vs. broad) smile resulted in higher actual click behaviors. Although the results of this field study offer high ecological validity, sample representativeness, and enhanced behavioral realism *per se*, it also raises the possibility that extraneous variables might have distorted our findings, giving rise to lower internal validity. Conclusively, the real-world context of this study demanded certain trade-offs in the design process of stimuli: (1) we used a female expresser, (2) the brand was fictitious, and (3) our participant pool consisted of female observers from the US: an individualistic country (Hofstede 1984).

Another constraint regarding generalizability was the prerequisite for participants to possess an interest in luxury goods. Considering the importance of gender-specific reactions to smiles in further discerning empirical intuitions (Trivedi and Teichert 2019) and acknowledging the potential cross-cultural variations in interpreting smiles (Wang et al. 2018), our ability to disentangle differences in ad effectiveness between male expressers and observers from collectivist cultures has yet to be fully reciprocated. We tackled these issues in Study 2b.

## 5 | Study 2b: A Second Field Study on Meta: Enhancing External Validity

Study 2b was preregistered: [aspredicted.org/blind.php?x=SFD\\_8ZL](https://aspredicted.org/blind.php?x=SFD_8ZL). In this second Meta advertising study, we sought to replicate the findings of Study 2a with three key changes. First, past cross-national research has pointed out that consumers from different countries may interpret the same smile in

different ways due to cultural differences (Wang et al. 2018). Correspondingly, we recruited Meta-users from a collectivistic country, China<sup>14</sup>, to test whether our observed effect extends outside the US. Second, the role of the expresser's gender is important in the smile intensity research, as it influences the magnitude and type of emotional contagion experienced by observers in nonverbal interactions (Doherty et al. 1995). Trivedi and Teichert (2019, p.197) explicitly advocate probing the variations in how smiles are perceived differently based on the genders of expressers and observers. Consequently, we employed a male stimulus and male participants. Third, we featured an actual sunglass<sup>15</sup> ad from Prada, one of the leading brands in the Asia-Pacific luxury market (Statista 2023b), to enhance the realism dimension of this study.

## 5.1 | Method

### 5.1.1 | Stimuli Development

To safeguard that the effects obtained in Study 2a were not distorted by demographic characteristics of the expresser (e.g., gender, ethnicity), we developed a new set of stimuli by acquiring a photo of a male Asian model wearing sunglasses and exhibiting a neutral expression, obtained from a public commercial on the Prada® China Official Website ([prada.com/cn](http://prada.com/cn)). We then applied the same morphing procedure as detailed in Study 2a to create the broad smile condition; the only variation in the two ads was the level of activity in the AU12 and AU6 muscle action units, resulting in either the level 1 or level 5 smile. These intensity levels corresponded with those for neutral expressions and broad smiles as delineated in the AMFD (Chen, Norman, and Nam 2021) (see Table 5 for the stimuli).

### 5.1.2 | Pretest of the Stimuli

To check the validity of our stimuli and tease out alternative accounts, we recruited a separate convenience sample of 70 male Prolific members ( $M_{\text{age}} = 34.29$ ,  $SD = 7.64$ , compensation = \$0.30<sub>per individual</sub>) who were fluent in English and declared their ethnicity as East Asian, for an ad evaluation task. In contrast to Study 2a, we used no other screening criteria, which allowed the inclusion of a range of luxury and non-luxury consumers, enabling an unbiased estimation of the factors that impact luxury ad perceptions. Participants were randomly assigned to a two-cell (smile intensity: neutral vs. broad) between-subjects design. Following Study 2a's pretest procedure, they then rated the expresser's smile strength (as a manipulation check), the authenticity of the smile expression, facial attractiveness, trustworthiness of the smile, perceived competence, perceived warmth, perceived prestige, ad realism, and the brand's perceived luxury as single-item confound checks. They also completed an attention check identical to the pretest in Study 2a.

### 5.1.3 | Pretest Results

A cross-tabulation analysis revealed that each participant correctly discerned whether the expresser in the ad was smiling or not, based on the condition (neutral expression vs. broad smile) assigned to them. The manipulation for the smile intensity operated as

anticipated. Smile strength ratings were significantly lower when the expresser displayed a neutral ( $M = 1.12$ ,  $SD = 0.27$ ) versus broad smile ( $M = 3.92$ ,  $SD = 0.72$ ),  $t(68) = -21.54$ ,  $p < 0.001$ . Moreover, the ad with a neutral expression received significantly higher ratings on perceived competence ( $M_{\text{neutral}} = 3.79$ ,  $M_{\text{broad}} = 2.46$ ;  $t(68) = 4.73$ ,  $p < 0.001$ ), perceived prestige ( $M_{\text{neutral}} = 4.15$ ,  $M_{\text{broad}} = 3.49$ ;  $t(68) = 2.47$ ,  $p < 0.05$ ), and lower ratings on perceived warmth ( $M_{\text{neutral}} = 2.15$ ,  $M_{\text{broad}} = 3.71$ ;  $t(68) = -6.55$ ,  $p < 0.001$ ). Meanwhile, authenticity of the smile expression ( $M_{\text{neutral}} = 3.52$  vs.  $M_{\text{broad}} = 3.43$ ;  $p = 0.37$ ), facial attractiveness ( $M_{\text{neutral}} = 3.96$  vs.  $M_{\text{broad}} = 3.88$ ;  $p = 0.33$ ), trustworthiness of the smile ( $M_{\text{neutral}} = 3.35$  vs.  $M_{\text{broad}} = 3.51$ ;  $p = 0.45$ ), ad realism ( $M_{\text{neutral}} = 4.18$  vs.  $M_{\text{broad}} = 4.07$ ;  $p = 0.63$ ), and Prada's perceived luxury ( $M_{\text{neutral}} = 4.59$  vs.  $M_{\text{broad}} = 4.52$ ;  $p = 0.47$ ; difference from the scale midpoint:  $t(69) = 4.19$ ,  $p < 0.001$ ) did not significantly differ across both conditions. This confirms the success of our manipulation, effectively discarding these variables as potential sources of confounding.

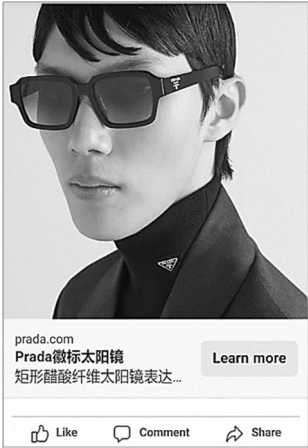
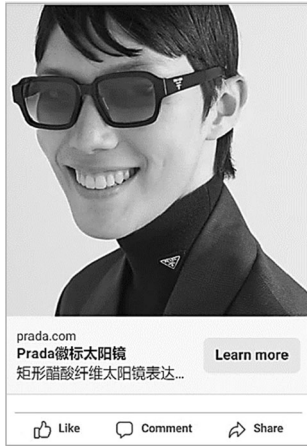
### 5.1.4 | Procedure and Design of the Meta Study

Similar to Study 2a, we utilized a single-factor (neutral expression vs. broad smile) between-subjects design, focusing on the CTR and CPC of the ads as dependent variables. Additionally, we gathered the age data of the users to incorporate it as a covariate. Following our preregistration, we launched both ad campaigns in November 2023 as A/B tests and the ads ran in parallel for three consecutive days (72 h), starting and ending at 12:00 a.m. Beijing Time. Our complete ad settings are documented in Table 5. Exceeding our preregistered budget plan, we evenly distributed €152 to both ad conditions. This budget allowance guaranteed a baseline exposure to  $\approx 70,820$  users and an aggregated minimum of  $\approx 615$  click-throughs, as determined through a power analysis performed by Meta's targeting algorithms. Differing from Study 2a, participants who clicked on our ads were taken to the online store of Prada China, providing them with further information about the featured sunglasses. For both campaigns, we used the same product description in Chinese, taken from the official ad, to advocate message consistency.

## 5.2 | Results

Replicating the results of Study 2a with a *post-hoc* power level of 0.99 (Faul et al. 2009), Table 5 presents the key findings. Our campaigns engaged 71,658 unique Meta users from China, divided into two groups ( $Reach_{\text{neutral}} = 35,933$ ,  $Reach_{\text{broad}} = 35,725$ ). The ad featuring a neutral expression received 405 clicks, in contrast to the broad smile ad, which attracted 226 clicks. Primarily, the neutral expression ad achieved a higher CTR (1.127%) and a lower CPC (€0.18) than the broad smile ad (CTR = 0.632%, CPC = €0.33) ( $\chi^2(1)_{\text{CTR (neutral vs. broad)}} = 50.18$ ,  $p < 0.001$ ). Applying Study 2a's dummy coding procedure, robustness test results from the binary logistic regression unveiled a significant positive impact of the neutral expression condition on the number of clicks ( $\beta = 0.58$ ,  $SE = 0.08$ , Wald  $\chi^2(1) = 48.82$ ,  $p < 0.001$ ;  $Exp(\beta) = 1.79$  (OR),  $CI_{95\%}$ ,  $Exp(\beta) = [1.52, 2.10]$ ). This indicates that Chinese observers viewing the ad with a neutral expression were 1.79 times<sup>16</sup> more inclined to click on it than those who saw the ad featuring a broad smile. Similar to Study 2a, the interaction between smile intensity and age

TABLE 5 | Results of the second Meta field study.

Single-factor design (A/B testing)	Neutral expression ad stimulus condition	Broad smile ad stimulus condition
Stimuli pictures		
<b>Descriptives of participants and ad performance metrics</b>		
Gender	Male: 100%, Female: 0%	Male: 100%, Female: 0%
Reach (i.e., different users exposed to ads) ( $N_{total} = 71,658$ )	35,933	35,725
Reach by age groups	18–24 = 12,935 25–34 = 8983 35–44 = 6108 45–54 = 2515 55–64 = 3,93 65+ = 1799	18–24 = 13,218 25–34 = 9176 35–44 = 5358 45–54 = 4287 55–64 = 1429 65+ = 2257
Impressions (i.e., total number of exposures to ads)	36,008	35,837
Frequency	1.0020	1.0031
Number of ad clicks	407 [405]	229 [226]
Expenditure (i.e., budget: amount spent)	€76.17	€75.43
CTR (%)	1.127	0.632
CPC	€0.18	€0.33

(†) Clicks presented in brackets indicate correction based on frequency.

(‡) Ad settings = Ad campaign objective: *traffic*, Performance goal: *maximize number of clicks*, Bid strategy: *highest volume*, Location: *China*, Language: *Chinese*, Device: *All devices*.

was not significant ( $p = 0.15$ ), pointing to a consistent effect across the age groups in Table 5.

### 5.3 | Discussion

Up to this point, Studies 1, 2a, and 2b have jointly reinforced our main thesis ( $H_1$ ) that smile intensity has a detrimental impact on luxury ad effectiveness. Neutral expressions have facilitated greater ad engagement in terms of TES, CTR, and CPC. This study further validated the robustness of this effect, demonstrating that it remains significant regardless of (1) the expresser's gender and ethnicity, (2) the participants' gender and cultural background, as well as across (3) a different product and a real luxury brand. This finding might be explained by the fact that luxury brands tend to focus on

portraying elitism, detachment, and sophistication, characteristics often associated with restrained emotional expression (Zhu et al. 2022). Consistent with the psychophysical attributes of facial expressions (Ekman 1993), neutral expressions, in contrast to broad smiles, might better convey these qualities, thereby enhancing advertising success. Another possible rationalization for this conclusion might be the proximal impact of neutral expressions on perceived authenticity and the personal trust of consumers—a conjecture in line with Choi, Choi and Mattila (2020).

Until then, a critical question remains to be answered: Why do we consistently observe this effect, and what factors are attributable to its occurrence? Essiz et al. (2023) and Viglia, Zaefarian and Ulqinaku (2021) mutually advise using real social media data together with controlled experiments to achieve results that are

more internally valid. Building on this advice, the next controlled experiment aims to address the above question.

## 6 | Study 3: Investigating the Serial Mediation Mechanism and the Boundary Role of Lay Rationalism

Study 3 was preregistered: [aspredicted.org/blind.php?x=85D\\_156](https://aspredicted.org/blind.php?x=85D_156). This study aimed to bolster the internal validity of the observed effect. It was designed to (1) test our proposed serial mediation by examining the perceived competence and ad credibility as underlying mechanisms, and (2) investigate in parallel whether there is an interaction effect between smile intensity and lay rationality of consumers in predicting luxury ad effectiveness. Building on Studies 1 to 2b, we considered two additional covariates: product involvement level (Septianto, Kemper, and Northey 2023) and attentional differences (i.e., the time spent viewing the ad) (To and Patrick 2021) that could partially account for the observed effect.

On the grounds that facial expressions can affect not only attitudes towards the ad but also impact the willingness to pay (Isabella and Vieira 2020; Shuqair et al. 2024), we further refined our measurement of luxury ad effectiveness by capturing two widely deployed proxies: (1) ad attitudes and (2) purchase intention towards the promoted luxury product. Here, we examined our prediction that neutral expressions in luxury ads positively influence ad attitudes and purchase intention. This effect was expected to stem from heightened perceptions of competence and ad credibility, and it was anticipated to be more pronounced among high lay rationalistic consumers who base their decisions on rational thinking rather than feelings.

### 6.1 | Method

#### 6.1.1 | Participants and Design

In accordance with our preregistration, 260 US-based male users from Prolific ( $M_{\text{age}} = 36.96$ ,  $SD = 13.19$ , ranging from 19 to 75, compensation = \$0.80<sub>per individual</sub>) participated in this study. We randomly assigned these users to a single-factor (smile intensity: neutral vs. broad) between-subjects design experiment in October 2023. The majority of users (67.1%) held a bachelor's degree or above, and the mean annual household income was \$53,545 ( $SD = \$39,126$ ). To mitigate risks to the study's internal validity, we used three Prolific screening criteria: (1) recruited users who own more than two luxury items that cost over \$250, (2) excluded users from previous pretests, and (3) approval rate: min—99%.

Participants spent an average time of 4.08 min completing the study. The study was set for desktop views only to ensure that our ads are viewed and evaluated in a similar visual context. Eight users were filtered out for failing to identify if the expresser was smiling or not based on the condition (neutral vs. broad) they were assigned, and four users were excluded as they demonstrated zero variance across all items measured for key constructs (apart from the demographic questions). This resulted in the final sample of 248 users ( $n_{\text{neutral expression}} = 126$ ,  $n_{\text{broad smile}} = 122$ ). Our results demonstrated the same patterns even when these exclusions were not applied. Based

on the obtained effect size and sample size, we performed a *post-hoc* power analysis using G\*Power 3.1 (Faul et al. 2009) and attained a statistical power of 0.97.

#### 6.1.2 | Procedure and Measures

This study was conducted within the hypothetical context of a watch company<sup>17</sup> seeking to investigate the effectiveness of different ads prior to their projected release. To minimize the possibility of demand-induced effects (Nichols and Maner 2008), we used the same gender-matching protocol in Study 2a. Participants were briefed only on the fact that Astrum, a new luxury watch company, was exploring the possibility of entering the US market. They were then requested to evaluate one of Astrum's potential ads (see Appendix B for the stimuli). In this study, we purchased and downloaded a newly licensed stock image from [istockphoto.com](https://www.istockphoto.com) of a Caucasian male model wearing a luxury watch and displaying a neutral expression. Following the earlier stimuli development procedure, we digitally morphed and calibrated the original image to develop the broad smile condition. In both ad versions, we used the slogan of “*Timeless Elegance*” to enhance status perceptions of the Astrum.

After participants were exposed to one of two ad conditions, we captured their ad attitudes using five items ( $\alpha = 0.96$ ,  $CR = 0.98$ ,  $AVE = 0.82$ ) from To and Patrick (2021) and gauged their purchase intention for the promoted watch with three items ( $\alpha = 0.93$ ,  $CR = 0.94$ ,  $AVE = 0.74$ ) adapted from Dodds, Monroe and Grewal (1991) as dependent variables. To explore the underlying attribution processes, we measured the expresser's perceived competence using four items ( $\alpha = 0.95$ ,  $CR = 0.97$ ,  $AVE = 0.78$ ) based on Wang et al. (2017), perceived ad credibility with seven-item scale ( $\alpha = 0.93$ ,  $CR = 0.94$ ,  $AVE = 0.75$ ) retrieved from Sarofim and Cabano (2018), and lay rationalism with six-item scale ( $\alpha = 0.82$ ,  $CR = 0.83$ ,  $AVE = 0.71$ ) sourced from Hsee et al. (2015). All constructs were measured using either 5-point Bipolar or Likert scales in a counterbalanced order (Appendix A for the factor loadings). We determined composite scores for each construct by averaging participants' responses to the scale items. For a given construct, the Cronbach's  $\alpha$ ,  $CR (\geq 0.70)$ , and the AVE values ( $\geq 0.50$ ) exceeded the minimum thresholds recommended by Sarstedt et al. (2022), hence safeguarding internal consistency and convergent validity. To evaluate discriminant validity, we examined the heterotrait-monotrait (HTMT) ratio of correlations. For all pairs of constructs, the HTMT ratios were below the 0.85 cap (ranging from 0.21 to 0.67) (Henseler, Ringle, and Sarstedt 2015), ascertaining the discriminant validity. The overall fit indices were deemed acceptable ( $GFI = 0.95$ ,  $CFI = 0.98$ ,  $RMSEA = 0.028$ ,  $\chi^2/df = 2.86$ ) (Hu and Bentler 1999).

Participants also responded to the same covariates, the manipulation check, and the attention check as operationalized in Study 2a. In addition, we monitored the duration they spent viewing the ad to capture attentional variances, setting a baseline exposure time of 20 s (Karagür et al. 2022). Their product involvement level was assessed using a single-item measure (1 = not at all, 5 = very involved) from Septianto, Kemper and Northey (2023). In the final step, participants provided their demographic information (age, education, and annual household income). Upon completion of the study, they were thanked



**TABLE 6** | Pretest results of Study 3.

Manipulation and confound checks	Neutral expression ad		Broad smile ad		<i>t</i> -values	<i>p</i> -values
	M	SD	M	SD		
Smile strength (manipulation check)	1.20	0.39	4.07	0.56	-24.88	***
Authenticity of the smile expression	3.25	1.02	3.42	1.14	-0.65	0.51 (n.s)
Facial attractiveness	3.06	0.87	2.94	1.05	0.52	0.60 (n.s)
Trustworthiness of the smile	2.97	1.04	2.86	0.83	0.48	0.63 (n.s)
Perceived competence	3.79	0.85	3.16	0.89	3.02	**
Perceived warmth	2.09	1.04	2.76	1.03	-2.70	**
Perceived prestige	4.32	0.97	3.54	1.05	3.22	**
Ad realism	3.46	1.06	3.61	0.97	-0.61	0.53 (n.s)
Brand's perceived luxury	4.40	0.96	4.20	0.88	0.90	0.36 (n.s)

(†) M = Mean, SD = Standard deviation, \*\*\* $p < 0.001$  ( $t$ -value  $\pm 3.29$ ), \*\* $p < 0.01$  ( $t$ -value  $\pm 2.58$ ) (two-tailed), n.s = not significant.  
 (‡) A higher mean score indicates a stronger agreement for the related variable (5-Point Scale).

and given a debriefing, which included the information that Astrum was a fictitious company.

### 6.1.3 | Pretest

Utilizing the same measures from our earlier pretests, we checked the effectiveness of the smile intensity manipulation on a separate pool of 70 male users from Prolific® ( $M_{\text{age}} = 27.33$ ,  $SD = 6.52$ , US residents, compensation = \$0.30<sub>per individual</sub>). They were randomly assigned to a two-cell (smile intensity: neutral vs. broad) between-subjects design. An independent  $t$ -test confirmed the success of our manipulation, showing that the neutral expression (vs. broad) smile ad received lower ratings on perceived smile strength ( $M_{\text{neutral}} = 1.20$ ,  $M_{\text{broad}} = 4.07$ ;  $t(68) = -24.88$ ,  $p < 0.001$ ). Noticeably, participants reported higher perceived luxury of the Astrum in both conditions ( $M_{\text{neutral}} = 4.40$ ,  $M_{\text{broad}} = 4.20$ ;  $t(68) = 0.90$ ,  $p = 0.36$ ; difference from the scale midpoint:  $t(69) = 4.19$ ,  $p < 0.001$ ). For brevity, we reported detailed pretest results in the Table 6.

## 6.2 | Results

### 6.2.1 | Manipulation Check, Attentional Differences, Equivalence of Groups, and Normality Assumptions

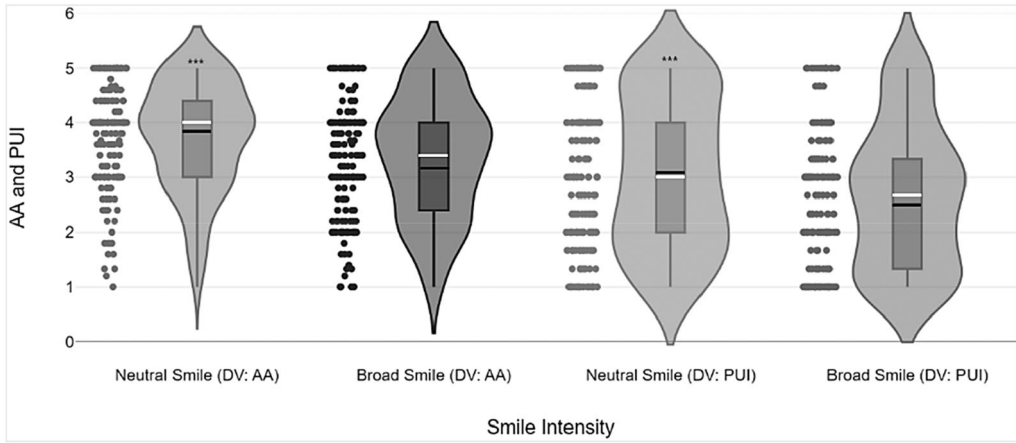
The manipulation for the smile intensity worked as anticipated, where the expresser with a neutral (vs. broad) smile was rated significantly lower in smile strength ( $M_{\text{neutral}} = 1.24$ ,  $SD = 0.55$  vs.  $M_{\text{broad}} = 3.53$ ,  $SD = 0.93$ ;  $t(246) = -23.55$ ,  $p < 0.001$ ,  $\eta_p^2 = 0.68$ ). In addition, there were no significant differences in the duration participants spent observing the ads ( $M_{\text{neutral}} = 27.95$  s vs.  $M_{\text{broad}} = 27.57$  s;  $p = 0.89$ ), ruling out attentional concerns. Regarding the group equivalence, the neutral expression and broad smile conditions did not differ significantly in terms of age ( $\chi^2(4, N = 248) = 0.791$ ,  $p > 0.05$ ), education ( $\chi^2(4, N = 248) = 1.423$ ,  $p > 0.05$ ), and income ( $\chi^2(3, N = 248) = 1.126$ ,  $p > 0.05$ ). As for the normality of dependent variables in each smile intensity condition, the absolute kurtosis and skewness values were within the permissible normality range of  $(-2, 2)$  (Hair et al. 2010).

### 6.2.2 | Main Effect

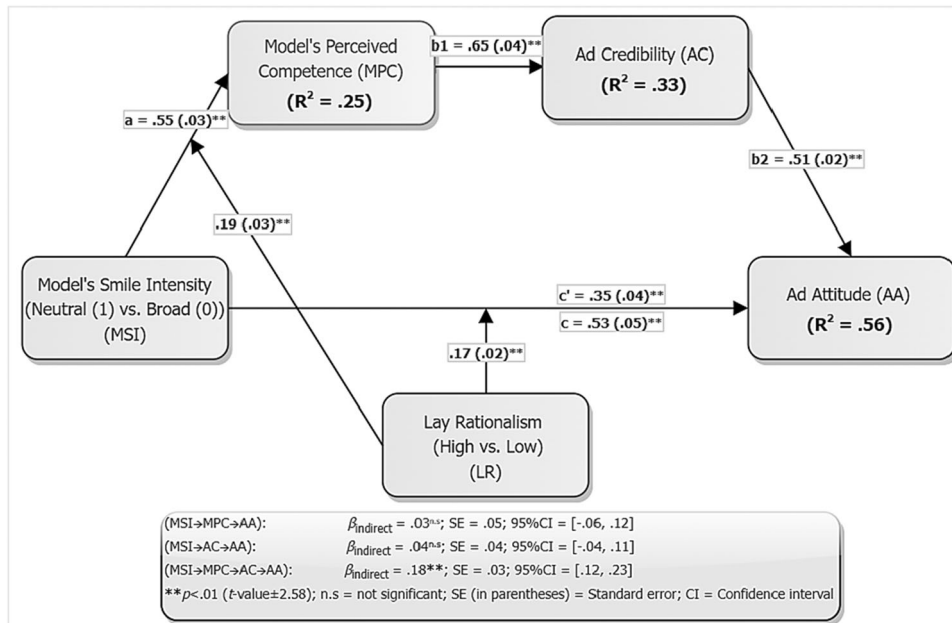
Central to our  $H_1$ , we next built a general linear model: MANCOVA by using composite scores of ad attitudes and purchase intention as dependent variables, smile intensity as the fixed factor (1 = neutral, 0 = broad), and (1) authenticity of the smile expression, (2) facial attractiveness, (3) trustworthiness of the smile, (4) perceived warmth, (5) perceived prestige, (6) ad realism, (7) product involvement, (8) Astrum's perceived luxury, (9) age, (10) education, and (11) annual household income as covariates<sup>18</sup>. The results showed that smile intensity significantly impacted both the ad attitudes ( $F(1, 246) = 8.19$ ,  $p < 0.001$ ;  $M_{\text{neutral}} = 3.73$ ,  $SD = 0.97$  vs.  $M_{\text{broad}} = 3.36$ ,  $SD = 1.08$ ,  $\eta_p^2 = 0.06$ ) and purchase intention ( $F(1, 246) = 4.90$ ,  $p < 0.001$ ;  $M_{\text{neutral}} = 3.07$ ,  $SD = 1.36$  vs.  $M_{\text{broad}} = 2.65$ ,  $SD = 1.30$ ,  $\eta_p^2 = 0.04$ ), signifying higher effectiveness of the neutral expression condition in both cases. This supports  $H_1$  (Figure 6 for the violin plot comparisons). Among the covariates<sup>19</sup>, perceived prestige of the expresser and perceived luxuriousness of the Astrum significantly influenced ad attitudes ( $F_s(1, 246) = 4.86_{\text{perceived prestige}}$ ;  $4.19_{\text{perceived luxuriousness}}$ ,  $p_s < 0.001$ ) and purchase intention ( $F_s(1, 246) = 3.71_{\text{perceived prestige}}$ ;  $3.56_{\text{perceived luxuriousness}}$ ,  $p_s < 0.001$ ), nevertheless they did not interact with smile intensity in predicting ad attitudes and purchase intention ( $p_s \geq 0.19$ ).

### 6.2.3 | Process Evidence

To test the moderated serial mediation, we ran two multiple regressions using PROCESS<sub>4.3.1</sub> (Model 92) with 10,000 bootstrap iterations (Hayes 2017). In the first model ( $R^2 = 0.56$ ), we designated ad attitudes (Y) as the dependent variable, smile intensity (X) as the independent variable (1 = neutral, 0 = broad), the model's perceived competence ( $M_1$ ) as the first mediating variable, ad credibility ( $M_2$ ) as the second mediator, and lay rationalism (W) as the categorical moderator (1 = high, 0 = low). In the second model ( $R^2 = 0.49$ ), purchase intention (Y) was the dependent variable, and the other variables remained the same. Figures 7 and 8 present detailed results<sup>20</sup>. In both models, the neutral expression had a positive direct effect on perceived competence ( $\beta_{\text{first model}} = 0.55$ ,  $SE = 0.03$ ,



**FIGURE 6** | Violin plots comparing ad attitudes (AA) and purchase intention (PUI) scores between neutral expression and broad smile conditions in Study 3. *Notes.* The horizontal black and white lines inside the boxplots represent median and mean values, respectively. Dots on the left side of each plot show the data range for the assigned condition. The width of the violin shape represents the probability density estimates at different points. \*\*\* $p < 0.001$ .

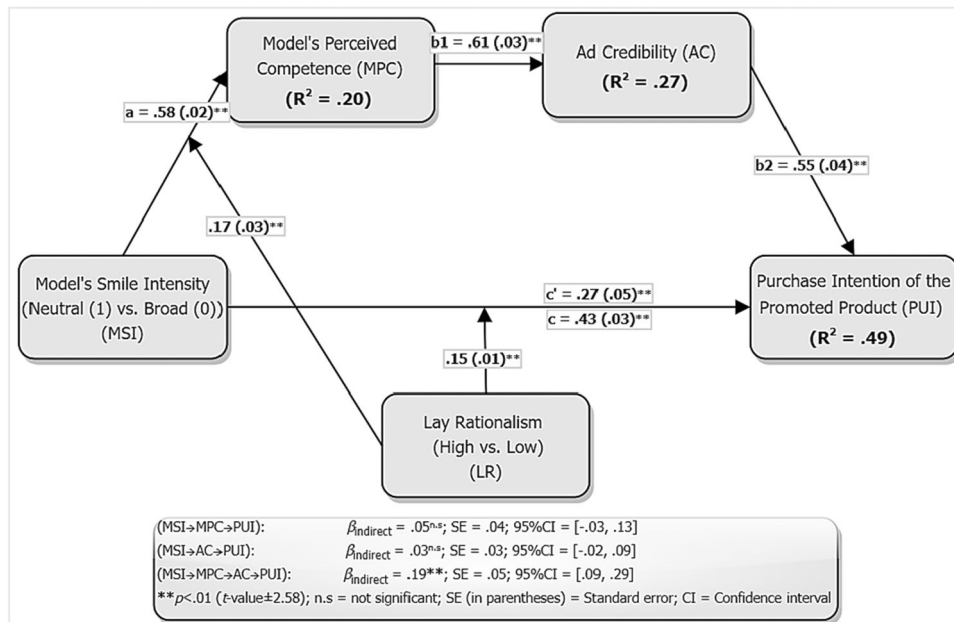


**FIGURE 7** | Moderated serial mediation results with ad attitude as the dependent variable. *Notes.*  $c'$  = Direct effect of smile intensity on ad attitude;  $c$  = Total effect of smile intensity on ad attitude;  $c = c' + (a \times b1 \times b2)$ . Only significant paths are presented.

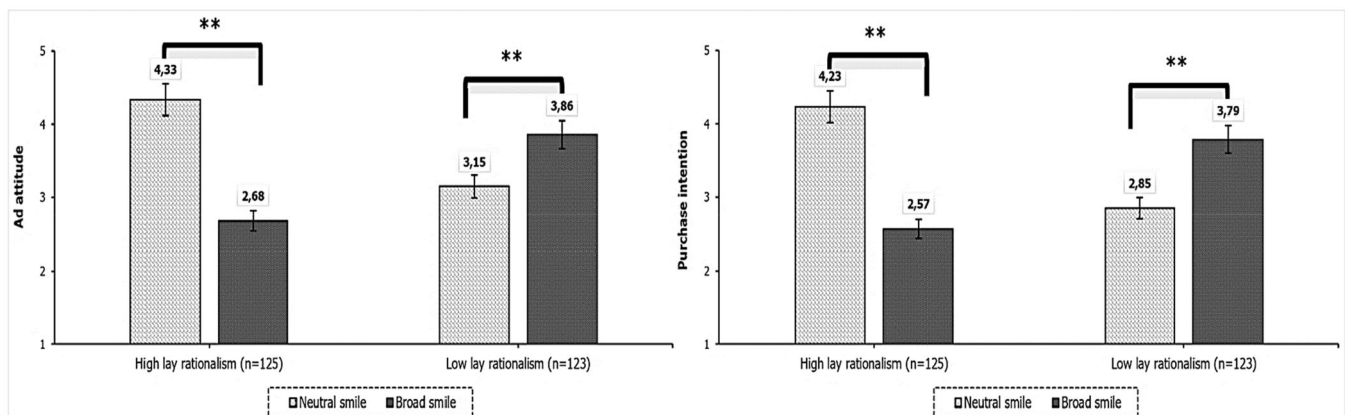
$p < 0.001$ ;  $\beta_{\text{second model}} = 0.58$ ,  $SE = 0.02$ ,  $p < 0.001$ ). Further, perceived competence had a positive direct effect on the ad credibility ( $\beta_{\text{first model}} = 0.65$ ,  $SE = 0.04$ ,  $p < 0.001$ ;  $\beta_{\text{second model}} = 0.61$ ,  $SE = 0.03$ ,  $p < 0.001$ ), which in turn, positively influenced ad attitudes ( $\beta_{\text{first model}} = 0.51$ ,  $SE = 0.02$ ,  $p < 0.001$ ) and purchase intention ( $\beta_{\text{second model}} = 0.55$ ,  $SE = 0.04$ ,  $p < 0.001$ ). This supports **H<sub>2a</sub>**. Importantly, the effect of neutral expression on ad attitudes and purchase intention was serially mediated by the perceived competence → ad credibility path, as the  $CI_{95\%}$  for indirect effects<sup>21</sup> did not include zero ( $\beta_{\text{first model}} = 0.18$ ,  $SE = 0.03$ ,  $p < 0.001$ ,  $CI_{95\%} = [0.12, 0.23]$ ;  $\beta_{\text{second model}} = 0.19$ ,  $SE = 0.05$ ,  $p < 0.001$ ,  $CI_{95\%} = [0.09, 0.29]$ ). Finally, we reversed the order of the mediators (i.e., ad credibility → perceived competence) as a robustness check and found non-significant serial mediation effects on ad attitudes ( $\beta_{\text{indirect}} = 0.02$ ,  $p = 0.26$ ) and purchase intention ( $\beta_{\text{indirect}} = 0.03$ ,  $p = 0.23$ ). In tandem, **H<sub>2b</sub>** is supported.

#### 6.2.4 | Moderation Effects

Regarding the role of lay rationalism, we found it to moderate the effect of smile intensity on ad attitudes ( $\beta_{\text{first model}} = 0.17$ ,  $SE = 0.02$ ,  $p < 0.001$ ) and purchase intention ( $\beta_{\text{second model}} = 0.15$ ,  $SE = 0.01$ ,  $p < 0.001$ ). Figure 9 demonstrates pairwise comparisons. For high lay rationalistic participants, the neutral expression led to higher ad attitudes ( $M_{\text{neutral}} = 4.33$  vs.  $M_{\text{broad}} = 2.68$ ;  $t(246) = 11.59$ ,  $p < 0.001$ ) and purchase intention ( $M_{\text{neutral}} = 4.23$  vs.  $M_{\text{broad}} = 2.57$ ;  $t(246) = 11.97$ ,  $p < 0.001$ ). These effects were reversed for low lay rationalistic counterparts (ad attitudes:  $M_{\text{neutral}} = 3.15$  vs.  $M_{\text{broad}} = 3.86$ ;  $t(246) = -4.58$ ,  $p < 0.001$ ; purchase intention:  $M_{\text{neutral}} = 2.85$  vs.  $M_{\text{broad}} = 3.79$ ;  $t(246) = -7.43$ ,  $p < 0.001$ ), indicating higher effectiveness of the broad smile. A subsequent conditional process analysis (Hayes and Rockwood 2020) revealed that the index of moderated mediation was significant ( $\beta_{\text{first model}} = 0.17$ ,  $SE = 0.02$ ,



**FIGURE 8** | Moderated serial mediation results with purchase intention as the dependent variable. Notes.  $c'$  = Direct effect of smile intensity on purchase intention;  $c$  = Total effect of smile intensity on purchase intention;  $c = c' + (a \times b1 \times b2)$ . Only significant paths are presented.



**FIGURE 9** | Two-way interaction effects of categorical lay rationalism and smile intensity on ad attitude and purchase intention ( $\pm$  error bars: standard errors). \*\* $p < 0.01$ .

$p < 0.001$ ,  $CI_{95\%} = [0.13, 0.21]$ ;  $\beta_{\text{second model}} = 0.14$ ,  $SE = 0.02$ ,  $p < 0.001$ ,  $CI_{95\%} = [0.10, 0.18]$ ). Put simply, perceived competence and ad credibility serially mediated the positive impact of a neutral expression on ad attitudes ( $\beta_{\text{first model}} = 0.16$ ,  $SE = 0.04$ ,  $CI_{95\%} = [0.08, 0.24]$ ) and purchase intention ( $\beta_{\text{second model}} = 0.13$ ,  $SE = 0.02$ ,  $CI_{95\%} = [0.09, 0.17]$ ) for high lay rationalistic participants, but not for the low lay rationalistic ones (ad attitudes:  $\beta_{\text{indirect}} = -0.02$ ,  $SE = 0.06$ ,  $CI_{95\%} = [-0.13, 0.09]$ ; purchase intention:  $\beta_{\text{indirect}} = -0.01$ ,  $SE = 0.05$ ,  $CI_{95\%} = [-0.10, 0.08]$ ). These results support  $H_{3a}$  and  $H_{3b}$ .

Although we established lay rationalism as a moderator, one alternative conceptualization is that lay rationalism could instead mediate our results. To dismiss this concern, we conclusively ran two PROCESS<sub>4.3.1</sub> Model 4 (Hayes 2017) and found that the indirect effects of smile intensity on ad attitudes ( $\beta = 0.08$ ,  $SE = 0.05$ ,  $CI_{95\%} = [-0.02, 0.16]$ ) and purchase intention ( $\beta = 0.04$ ,  $SE = 0.03$ ,  $CI_{95\%} = [-0.03, 0.11]$ ) through lay rationalism were non-significant.

### 6.3 | Discussion

Study 3 provided causal evidence for the predicted smile intensity effect and established the expresser's perceived competence and ad credibility as underlying dynamics behind the higher effectiveness of the neutral expression. By nature, some luxury consumers are perceived as lacking warmth, as they are thought to be focused on impression management (Dubois, Jung, and Ordabayeva 2021). This might explain their preference for neutral expression ads, which match the high-end image they desire to embody. Our mediation effects resonate with previous studies on the stereotype content model (Min and Hu 2022; Wang et al. 2017), further elucidating that smile intensity influences not only the motivation to buy luxury items and the formation of ad attitudes but also contributes to how competence and ad credibility are judged. From the reverse angle, these mediations manifest a negative spillover effect (Essiz and Senyuz 2024), in which consumers

might perceive lower status and withhold their purchases if the smiles shown in ads fail to match their competence expectancies.

Here, we also provided support for the moderating role of lay rationalism. This moderation effect is consistent with the contentions of Berg, Söderlund and Lindström (2015) and Wang et al. (2020), which could be explained by the tendency of low lay rationalistic consumers to view broad smiles as more emotionally appealing and less stress-inducing. Also, the emotional contagion mechanism might be more commonly observed in consumers with low lay rationalism, as they tend to depend on feelings for decision-making. In sum, one shortcoming of this study was its reliance on a male-only sample and a fictitious brand. This methodological choice limited our ability to illuminate gender differences, ad, and brand familiarity as possible confounding factors (Trivedi and Teichert 2019; Warren, Pezzuti, and Koley 2018). The following experiment aims to tackle this limitation by featuring a real brand within a gender-balanced sample.

## 7 | Study 4: Exploring the Boundary Role of Gaze Direction

Study 4's details were preregistered: [aspredicted.org/blind.php?x=2V3\\_79Y](https://aspredicted.org/blind.php?x=2V3_79Y). The main objective was to expand the scope of our investigation by replicating the findings of Study 3 and integrating the expresser's gaze direction as the second boundary condition, thus testing our full theorizing. To enhance the realism of our experiment and extend the applicability of our findings, we used a different stimulus: an actual unisex handbag ad directly from the Gucci US Official Website ([gucci.com/us/en](https://www.gucci.com/us/en)). Expanding upon the findings of Study 1, we selected Gucci for its prominent standing as a renowned company in the US luxury market, distinguished by a luxury brand recognition rate of  $\approx 90\%$  (Statista 2024).

### 7.1 | Method

#### 7.1.1 | Participants and Design

Following our preregistration, we recruited 350 US residents via Prolific (50% male,  $M_{\text{age}} = 39.78$ ,  $SD = 14.01$ , range: 18 to 77, compensation = \$1.00<sub>per individual</sub>) in November 2023. To align with the nature of the product being advertised, we opted for a gender-balanced sample and pre-screened regular luxury consumers who own a minimum of two luxury items priced above \$250, aiming to minimize internal validity concerns. All individuals who were part of our earlier studies were excluded before data collection. Regarding the profile of participants, nearly 70.1% possessed at least a bachelor's degree, with the average yearly household income being \$62,929 ( $SD = \$46,782$ ).

In this study, we employed a 2 (smile intensity: neutral vs. broad)  $\times$  2 (gaze direction: direct vs. averted) between-subjects experimental design, randomly assigning participants to one of four different ad conditions (see **Appendix C** for the stimuli). On average, participants took 4.89 min to complete the study. Akin to Study 3, this study was structured exclusively for desktop viewing and the dependent variables employed were identical.

### 7.1.2 | Procedure and Measures

Participants were presented with a scenario designed to mimic a realistic shopping situation, in which they were asked to imagine themselves browsing online luxury fashion stores. During this simulated digital shopping experience, they encountered an ad for a Gucci handbag. Participants were instructed to attentively observe the ad and reflect on their genuine reactions to it. To negate demand characteristics (Nichols and Maner 2008), the scenario deliberately avoided drawing attention to the attributes of the expresser depicted in the ad. Pertaining to stimuli, the original Gucci® ad showcased a Caucasian male model with a neutral expression and direct gaze. The manipulation of a broad smile was carried out in the same way as in our earlier studies. The gaze direction was manipulated using the neural filters toolbox in Adobe Photoshop, wherein the smart portrait function was activated, and the gaze slider was amended to achieve a 20-degree shift for the averted gaze conditions. Our approach is coherent with the method employed by Wang et al. (2018).

After being exposed to the scenario, participants were asked to complete 5-point multi-item scales to measure their ad attitudes ( $\alpha = 0.97$ ,  $CR = 0.98$ ,  $AVE = 0.81$ ), purchase intention for the promoted handbag ( $\alpha = 0.97$ ,  $CR = 0.97$ ,  $AVE = 0.79$ ), perceived competence ( $\alpha = 0.96$ ,  $CR = 0.97$ ,  $AVE = 0.76$ ), perceived ad credibility ( $\alpha = 0.95$ ,  $CR = 0.96$ ,  $AVE = 0.77$ ), and lay rationalism ( $\alpha = 0.79$ ,  $CR = 0.81$ ,  $AVE = 0.66$ ) in a counterbalanced order. These measures were identical to those used in Study 3 and collapsed into composite scores. The overall fit indices were adequate ( $GFI = 0.96$ ,  $CFI = 0.97$ ,  $RMSEA = 0.023$ ,  $\chi^2/df = 2.27$ ) (Hu and Bentler 1999). Across all constructs, the Cronbach's  $\alpha$ ,  $CR (\geq 0.70)$ , and  $AVE$  values ( $\geq 0.50$ ) were satisfactory (Sarstedt et al. 2022) and the HTMT ratios remained below the 0.85 benchmark, ranging from 0.22 to 0.71 (Henseler, Ringle, and Sarstedt 2015). Collectively, these psychometric properties safeguarded the reliability and validity of our constructs.

Besides, participants completed the same battery of covariates, manipulation, and attention checks regarding smile intensity as in Study 3, and all of them passed the attention check. Given the use of a real ad and brand, we additionally captured the ad familiarity (1 = yes, 0 = no) and brand familiarity, measured by a single item (1 = not at all familiar, 5 = very familiar) (Septianto, Kemper, and Northey 2023). Unlike Study 3, participants were required to respond to a two-item gaze manipulation check, adapted from To and Patrick (2021): “*Is the model featured in this ad looking at you or away from you?*” (1 = looking at me, 2 = not looking at me) and “*To what extent did you notice the direction of the model's eye?*” (1 = not at all, 5 = to a great extent). There were no significant differences in the extent to which participants noticed the model's gaze direction ( $M_{\text{direct}} = 4.61$  vs.  $M_{\text{averted}} = 4.76$ ,  $p = 0.42$ ) and all participants correctly identified it in accordance with their assigned condition. This supported the effectiveness of gaze manipulation.

As a control check, we asked participants whether they had previously encountered this Gucci® ad on any social media channels, with three affirming they had. Additionally, five participants

finished the entire study in less than a minute and displayed no variation in their responses to constructs. After eliminating these observations, our final sample consisted of 342 participants ( $n_{\text{neutral-direct}} = 87$ ,  $n_{\text{broad-direct}} = 86$ ,  $n_{\text{neutral-averted}} = 84$ ,  $n_{\text{broad-averted}} = 85$ ). Together with this, we achieved a *post-hoc* power level of 0.98 (Faul et al. 2009). Our effects were consistent even when these exclusions were not applied. Finally, participants provided their demographics (age, gender, education, and annual household income). Upon concluding the study, they were thanked and debriefed about its true purpose.

### 7.1.3 | Pretest

Prior to the main study, we validated the effectiveness of smile intensity manipulation through a separate pretest with 70 Prolific members (50% male,  $M_{\text{age}} = 36.25$ ,  $SD = 12.94$ , US residents, compensation = \$0.30<sub>per individual</sub>). We conducted a 2 (smile intensity)  $\times$  2 (gaze direction) ANOVA on participants' perceptions of smile strength. As anticipated, this analysis only showed a significant main effect of smile intensity ( $F(1, 68) = 21.11$ ,  $p < 0.001$ ;  $M_{\text{neutral}} = 1.10$ ,  $SD = 0.19$  vs.  $M_{\text{broad}} = 4.12$ ,  $SD = 0.91$ ). The main and interaction effects of gaze direction were not significant ( $F_s < 1$ ), confirming the success of smile intensity manipulation. Notably, authenticity of the smile expression ( $M_{\text{neutral-direct}} = 3.29$ ,  $M_{\text{broad-direct}} = 3.36$ ,  $M_{\text{neutral-averted}} = 3.34$ ,  $M_{\text{broad-averted}} = 3.31$ ;  $p_s \geq 0.77$ ) and ad realism ( $M_{\text{neutral-direct}} = 3.54$ ,  $M_{\text{broad-direct}} = 3.59$ ,  $M_{\text{neutral-averted}} = 3.55$ ,  $M_{\text{broad-averted}} = 3.57$ ;  $p_s \geq 0.84$ ) did not significantly differ between experimental conditions. As for our product selection<sup>22</sup>, we queried participants about their perception of the targeted audience for the advertised handbag: 1 = women, 2 = men, 3 = suitable for both genders (unisex). A significant majority of the participants (61, representing 87.2%) perceived it as unisex, whilst 7 (10%) saw it as mainly for men, and 2 (2.8%) for women. The proportional disparity in these views was significant ( $Z_{\text{unisex vs. men}} = 7.78$ ,  $p < 0.001$ ;  $Z_{\text{unisex vs. women}} = 9.26$ ,  $p < 0.001$ ), hence corroborating the unisex appeal of the handbag.

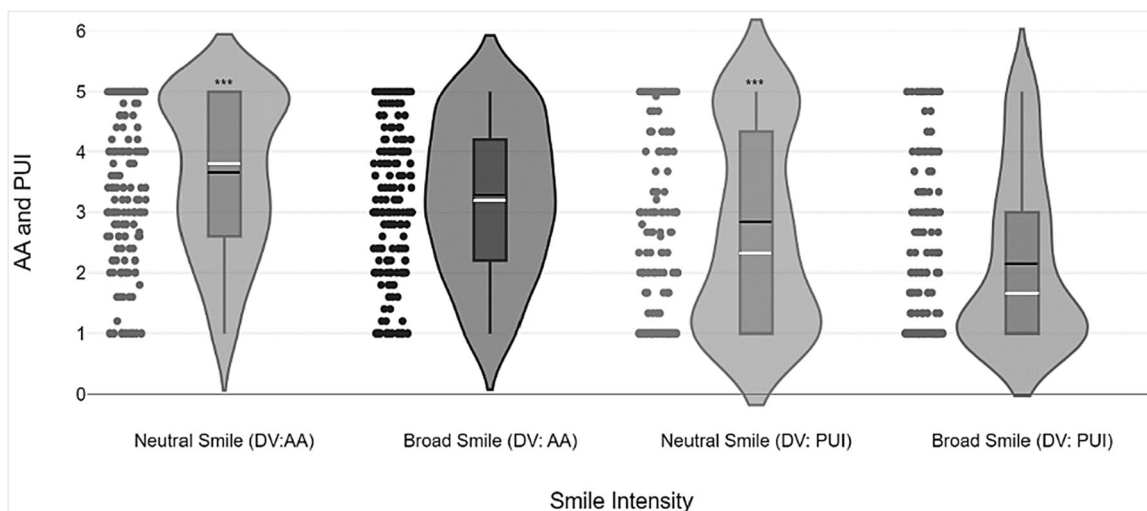
## 7.2 | Results

### 7.2.1 | Manipulation Check, Attentional Differences, Equivalence of Groups, and Normality Assumptions

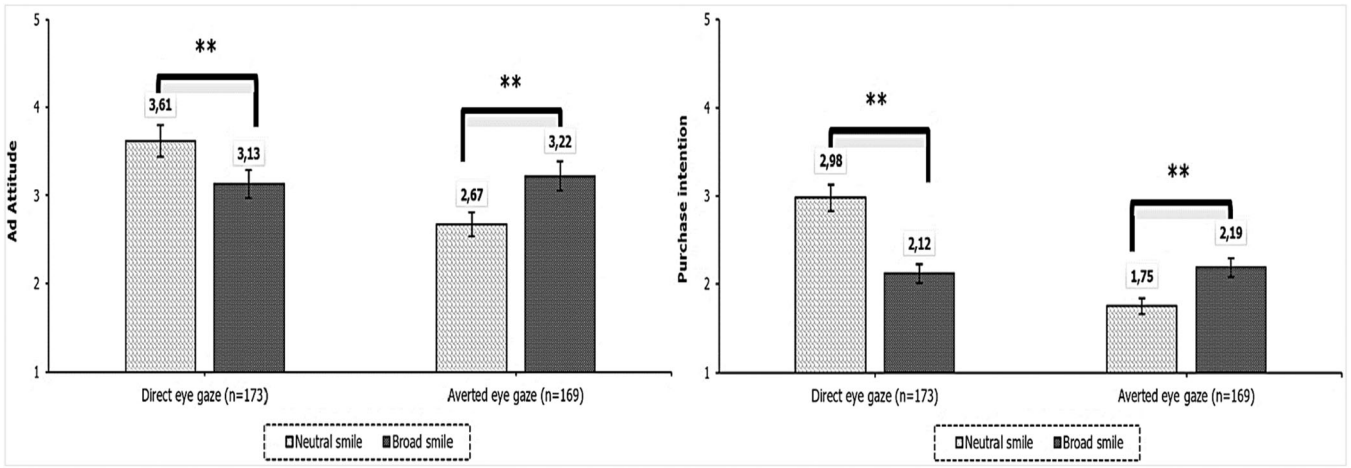
We conducted a 2 (smile intensity)  $\times$  2 (gaze direction) ANOVA on participants' perceptions of smile strength. Similar to the pretest, we identified a significant main effect of smile intensity ( $F(1, 338) = 12.57$ ,  $p < 0.001$ ;  $M_{\text{neutral}} = 1.19$ ,  $SD = 0.22$  vs.  $M_{\text{broad}} = 4.27$ ,  $SD = 0.78$ ), suggesting differences between the neutral and broad smile conditions. No significant main and interaction effects of gaze direction were observed ( $F_s < 1$ ). This reaffirmed the success of smile intensity manipulation. Consistent with Study 3, there were no significant deviations in the time participants spent viewing the ads across conditions ( $M_{\text{neutral-direct}} = 25.43$  s,  $M_{\text{broad-direct}} = 25.56$  s,  $M_{\text{neutral-averted}} = 26.01$  s,  $M_{\text{broad-averted}} = 25.79$  s;  $p_s \geq 0.11$ ). Pertaining to group equivalence, no significant difference between conditions was observed in terms of age ( $\chi^2(4, N = 342) = 1.127$ ,  $p > 0.05$ ), education ( $\chi^2(4, N = 342) = 1.268$ ,  $p > 0.05$ ), and income ( $\chi^2(3, N = 342) = 0.986$ ,  $p > 0.05$ ). Notably, ad attitudes and purchase intention were found to be normally distributed, as supported by the Kolmogorov-Smirnov normality tests, which showed non-significant results ( $p > 0.05$ ).

### 7.2.2 | Main and Interaction Effects

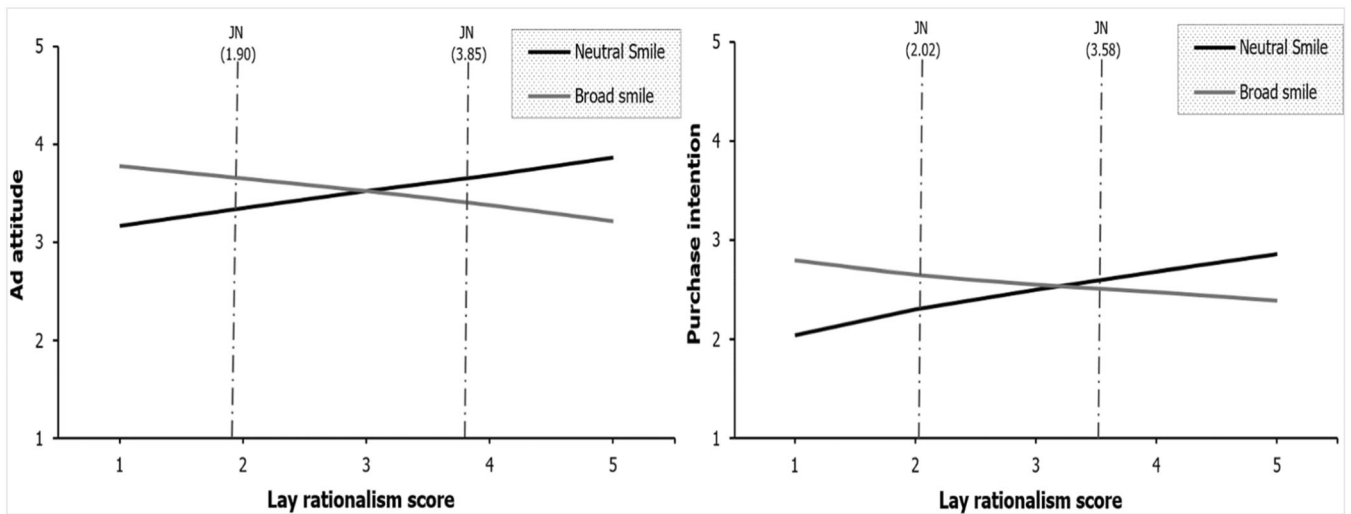
We next ran a 2 (smile intensity)  $\times$  2 (gaze direction) MANCOVA and unveiled a significant main effect of smile intensity on ad attitudes ( $F(1, 338) = 4.68$ ,  $p < 0.001$ ;  $M_{\text{neutral}} = 3.82$ ,  $SD = 1.14$  vs.  $M_{\text{broad}} = 3.26$ ,  $SD = 1.05$ ,  $\eta_p^2 = 0.04$ ) and purchase intention ( $F(1, 338) = 5.92$ ,  $p < 0.001$ ;  $M_{\text{neutral}} = 2.46$ ,  $SD = 1.02$  vs.  $M_{\text{broad}} = 1.74$ ,  $SD = 0.96$ ,  $\eta_p^2 = 0.05$ ), advocating greater effectiveness of neutral expressions in concert with  $H_1$  (see Figure 10). This was further qualified by significant smile intensity  $\times$  gaze direction interactions ( $F(1, 338)_{\text{ad attitudes}} = 4.24$ ,  $p < 0.001$ ;  $F(1, 338)_{\text{purchase intention}} = 5.12$ ,  $p < 0.001$ ). Decomposing these interactions, planned contrasts (see Figure 11) illustrated that neutral expression coupled with direct



**FIGURE 10** | Violin plots comparing ad attitude (AA) and purchase intention (PUI) scores between neutral expression and broad smile conditions in Study 4. *Note.* The horizontal black and white lines inside the boxplots represent median and mean values, respectively. Dots on the left side of each plot show the data range for the assigned condition. The width of the violin shape represents the probability density estimates at different points. \*\*\* $p < 0.001$ .



**FIGURE 11** | Two-way interaction effects of gaze direction and smile intensity on ad attitude and purchase intention ( $\pm$ error bars: standard errors).  $**p < 0.01$ .



**FIGURE 12** | Floodlight analyses of lay rationalism scores. *Note.* Vertical dash lines represent Johnson–Neyman (JN) points.

gaze resulted in higher ad attitudes ( $M_{\text{neutral}} = 3.61$ ,  $SD = 1.25$  vs.  $M_{\text{broad}} = 3.13$ ,  $SD = 1.08$ ,  $p < 0.001$ ,  $\eta_p^2 = 0.04$ ) and purchase intention ( $M_{\text{neutral}} = 2.98$ ,  $SD = 1.15$  vs.  $M_{\text{broad}} = 2.12$ ,  $SD = 0.97$ ,  $p < 0.001$ ,  $\eta_p^2 = 0.05$ ), supporting  $H_{4a}$ . As for the averted gaze, broad smile led to increased ad attitudes ( $M_{\text{neutral}} = 2.67$ ,  $SD = 1.02$  vs.  $M_{\text{broad}} = 3.22$ ,  $SD = 1.34$ ,  $p < 0.001$ ,  $\eta_p^2 = 0.03$ ) and purchase intention ( $M_{\text{neutral}} = 1.75$ ,  $SD = 1.01$  vs.  $M_{\text{broad}} = 2.19$ ,  $SD = 1.15$ ,  $p < 0.001$ ,  $\eta_p^2 = 0.02$ ).

To corroborate the moderating influence of lay rationalism, we next submitted ad attitudes and purchase intention to a 2 (smile intensity)  $\times$  2 (lay rationalism) MANCOVA. Importantly, two-way interactions emerged between smile intensity and lay rationalism in predicting ad attitudes ( $F(1, 338) = 4.76$ ,  $p < 0.001$ ) and purchase intention ( $F(1, 338) = 5.38$ ,  $p < 0.001$ ). We explicated this interaction further through two floodlight analyses (cf. Spiller et al. 2013) (see Figure 12). Inspecting the Johnson–Neyman points (Johnson and Neyman 1936), we found that respondents with high lay rationalism scores of  $\geq 3.85_{\text{first analysis}}$  (0.53 SD above the mean; 39.2% of respondents) and  $\geq 3.58_{\text{second analysis}}$  (0.26 SD above the mean; 44.5% of respondents) exhibit more favorable ad attitudes and purchase intention when the expresser features a neutral expression. In contrast,

those with low lay rationalism scores of  $\leq 1.90_{\text{first analysis}}$  (1.42 SD below the mean; 8.4% of respondents) and  $\leq 2.02_{\text{second analysis}}$  (1.3 SD below the mean; 13.2% of respondents) display more positive ad attitudes and purchase intention when the expresser features a broad smile. This finding reinforces  $H_{3a}$ .

### 7.2.3 | Alternative Accounts

In both MANCOVAs reported above, accounting for (1) authenticity of the smile expression, (2) facial attractiveness, (3) trustworthiness of the smile, (4) perceived warmth, (5) perceived prestige, (6) ad realism, (7) product involvement, (8) ad/brand familiarity, and (9) Gucci’s perceived luxury as covariates—revealed no interaction effects ( $F_s < 1$ ). Likewise, no gender effects were observed ( $F_s < 1$ ). These covariates did not dilute the moderation effects of gaze direction and lay rationalism.

### 7.2.4 | Process Evidence

To test underlying mechanisms through which gaze direction moderates the effect of smile intensity on ad attitudes and

purchase intention, we performed two multiple regressions via PROCESS<sub>4.3.1</sub> (Model 92;  $n = 10,000$  iterations) (Hayes 2017). In the first model ( $R^2 = 0.52$ ), we specified ad attitudes (Y) as the dependent variable, smile intensity (X) as the independent variable (1 = neutral, 0 = broad), perceived competence ( $M_1$ ) as the first mediator, ad credibility ( $M_2$ ) as the second mediator, and gaze direction (W) as the categorical moderator (1 = direct, 0 = averted). In the second model ( $R^2 = 0.47$ ), purchase intention (Y) acted as the dependent variable, while the other variables remained constant. Multicollinearity was not a concern in both models (VIFs  $\leq 2.49$ ) (Pieters 2017).

Comparable to Study 3, the positive impact of neutral expression on ad attitudes and purchase intention followed a serial mediation pattern through the perceived competence  $\rightarrow$  ad credibility pathway, evidenced by the  $CI_{95\%}$  for indirect effects excluding zero ( $\beta_{\text{first model}} = 0.14$ ,  $SE = 0.02$ ,  $p < 0.001$ ,  $CI_{95\%} = [0.10, 0.18]$ ;  $\beta_{\text{second model}} = 0.16$ ,  $SE = 0.01$ ,  $p < 0.001$ ,  $CI_{95\%} = [0.14, 0.18]$ ). This fortifies **H<sub>2b</sub>**. Moreover, the index of moderated mediation was significant ( $\beta_{\text{first model}} = 0.15$ ,  $SE = 0.03$ ,  $p < 0.001$ ,  $CI_{95\%} = [0.09, 0.21]$ ;  $\beta_{\text{second model}} = 0.14$ ,  $SE = 0.03$ ,  $p < 0.001$ ,  $CI_{95\%} = [0.08, 0.20]$ ). A conditional process analysis (Hayes and Rockwood 2020) unpacked that perceived competence and ad credibility serially mediated the positive effect of a neutral expression on ad attitudes ( $\beta_{\text{first model}} = 0.13$ ,  $SE = 0.02$ ,  $CI_{95\%} = [0.09, 0.17]$ ) and purchase intention ( $\beta_{\text{second model}} = 0.12$ ,  $SE = 0.01$ ,  $CI_{95\%} = [0.14, 0.16]$ ) when accompanied by a direct gaze. However, this serial effect was not present when the gaze was averted (ad attitudes:  $\beta_{\text{indirect}} = -0.04$ ,  $SE = 0.05$ ,  $CI_{95\%} = [-0.14, 0.06]$ ; purchase intention:  $\beta_{\text{indirect}} = -0.03$ ,  $SE = 0.04$ ,  $CI_{95\%} = [-0.11, 0.05]$ ). This supports **H<sub>4b</sub>**.

### 7.3 | Discussion

Study 4 shored up our conceptual framework by documenting how gaze direction moderates the effect of smile intensity on ad attitudes and purchase intention. By boosting the expresser's perceived competence and ad credibility, a neutral expression (vs. broad) smile leads to higher ad attitudes and purchase intention when paired with a direct (vs. averted) gaze. In the ambit of luxury consumption, this finding can be ascribed to the shared signal hypothesis, suggesting a preference for direct gaze over averted one due to associations of direct eye contact with positive traits like trustworthiness, confidence, and openness (Adams and Kleck 2003; Mason, Tatkov, and Macrae 2005).

Unexpectedly, we found that pairing a broad smile with an averted gaze can also be beneficial in fostering positive attitudes and purchases. This finding, not anticipated earlier, points to a double-edged match-up effect of gaze direction. At first glance, this challenges the findings of Wang et al. (2018) and might be attributed to the contextual differences and the intricate hedonic nature of luxury consumption. Another conceivable explanation is that the expresser's averted gaze can enhance the narrative transportation of observers into an ad, potentially leading to deeper information processing by adding an element of aloofness (To and Patrick 2021).

## 8 | The Supplementary Study: Do Detrimental Smile Effects Hold in Mass-Market Products?

Smile intensity effects might differ based on the type of product or service (Trivedi and Teichert 2019). While luxury products communicate exclusivity, competence, and aspirational messaging (Amatulli, De Angelis, and Donato 2020), mass-market products (economical, standardized offerings; Kim and Phua 2020) focus on accessibility, affordability, and functionality (Jestratičević, Uanhoro, and Rana 2024). This ultimately prompted us to consider an alternative boundary condition—product type, questioning whether the detrimental effect of smile intensity operates in mass-market products. Details of this study were preregistered: [aspredicted.org/dbxb-8cyd.pdf](https://aspredicted.org/dbxb-8cyd.pdf).

### 8.1 | Method

#### 8.1.1 | Participants and Design

We qualified a 2 (smile intensity: neutral vs. broad)  $\times$  2 (product type: luxury vs. mass-market) between-subjects experimental design, randomly assigning participants to one of four ad conditions (see Appendix D for the stimuli set). To eliminate potential biases from face morphing, we used the unedited natural facial expressions of a female model. To increase experimental realism and broaden the applicability of our findings across product categories, we featured a two-foundation makeup product: a luxury option from Prada and a mass-market option from Covergirl. Prada was selected to maintain consistency with Study 2b. The mass-market condition was manipulated following prior research, with Covergirl chosen as it is well-established as a mass-market cosmetic brand (Kim and Phua 2020). Given gender differences in beauty brand involvement (Chen and Wyer 2020) and adhering to our earlier gender-matching protocol, we recruited and retained 350 female consumers based in the US through Prolific in November 2024 in exchange for a small monetary compensation (\$0.80<sub>per individual</sub>).

#### 8.1.2 | Procedure and Measures

Participants were presented with a scenario simulating a realistic shopping experience, where they were asked to imagine searching for face foundations and viewing online cosmetic ads. Following exposure to the stimuli on each page, participants completed 5-point multi-item scales to assess their purchase intention for the promoted product ( $\alpha = 0.95$ ) and expresser's perceived competence ( $\alpha = 0.94$ ). As a robustness check, this study isolated competence as a standalone mediator by excluding ad credibility from the conceptual pathway. To account for brand personality differences, the five principal brand personality dimensions—ruggedness ( $\alpha = 0.85$ ), sophistication ( $\alpha = 0.87$ ), competence ( $\alpha = 0.83$ ), excitement ( $\alpha = 0.81$ ), and sincerity ( $\alpha = 0.88$ )—were captured in a counterbalanced order following Melzner and Raghbir (2023). We also measured perceived smile strength, brand familiarity, ad realism, and smile authenticity using the same scales as in Study 4. As a product type manipulation check, participants rated the extent to which they considered the advertised brand's product to be

exclusive on a scale from 1 (not at all) to 5 (very exclusive) (Kim and Phua 2020). Finally, they reported their age, education, and annual household income and were then debriefed. In terms of participant demographics ( $M_{\text{age}} = 38.35$ ,  $SD = 12.88$ , range: 18–74), approximately 66.3% held at least a bachelor's degree, and the average annual household income was \$64,573 ( $SD = \$48,135$ ).

## 8.2 | Results and Discussion

### 8.2.1 | Manipulation Checks

We began by comparing the luxury product and mass-market product conditions to assess differences in exclusivity and sophistication levels. An independent sample *t*-test supported the effectiveness of our product type manipulation, showing that participants in the luxury condition rated exclusivity significantly higher ( $M_{\text{luxury}} = 4.21$ ,  $SD = 1.20$ ) compared to those in the mass-market condition ( $M_{\text{mass-market}} = 3.32$ ,  $SD = 1.17$ ,  $t(346) = 7.02$ ,  $p < 0.001$ ). Similarly, sophistication ratings were higher in the luxury condition ( $M_{\text{luxury}} = 3.58$ ,  $SD = 1.29$ ) than in the mass-market condition ( $M_{\text{mass-market}} = 2.68$ ,  $SD = 1.20$ ,  $t(346) = 6.75$ ,  $p < 0.001$ ). The luxury condition also demonstrated a higher level of ruggedness ( $M_{\text{luxury}} = 3.06$ ,  $SD = 1.31$ ) compared to the mass-market condition ( $M_{\text{mass-market}} = 2.77$ ,  $SD = 1.17$ ,  $t(346) = 2.19$ ,  $p = 0.029$ ). No significant differences were observed in the other brand personality dimensions ( $ps \geq 0.12$ ). Besides, the smile intensity manipulation functioned as expected, with the expresser displaying a neutral (vs. broad) smile receiving significantly lower ratings for smile strength ( $M_{\text{neutral}} = 1.25$ ,  $SD = 0.74$  vs.  $M_{\text{broad}} = 4.13$ ,  $SD = 0.70$ ;  $t(346) = -37.40$ ,  $p < 0.001$ ,  $\eta_p^2 = 0.72$ ).

### 8.2.2 | Effects of Product Type

A 2 (smile intensity: neutral vs. broad)  $\times$  2 (product type: luxury vs. mass-market) ANCOVA on the purchase intention index revealed a marginally significant interaction effect ( $F(1, 346) = 3.23$ ,  $p = 0.063$ ). Pairwise comparisons designated that within the luxury condition, a neutral expression resulted in significantly higher purchase intention than a broad smile ( $F(1, 346) = 7.13$ ,  $p = 0.004$ ;  $M_{\text{neutral}} = 0.01$ ,  $SD = 1.39$  vs.  $M_{\text{broad}} = 3.52$ ,  $SD = 1.25$ ,  $\eta_p^2 = 0.03$ ). In the mass-market condition, there were no significant differences in purchase intention between the smile intensity conditions ( $M_{\text{neutral}} = 3.51$  vs.  $M_{\text{broad}} = 3.56$ ,  $p = 0.75$ ). The smile expression's authenticity, ad realism, and brand familiarity demonstrated no significant variation across experimental conditions ( $ps \geq 0.29$ ). Additionally, demographics and the five brand personality dimensions did not dilute the moderating effect of product type ( $F_s < 1$ ). This analysis achieved a *post-hoc* power level of 0.98 (Faul et al. 2009). An alternative two-way ANOVA on the expresser's competence index showed that, in the luxury condition, neutral expressions significantly enhanced competence perceptions compared to a broad smile ( $F(1, 346) = 6.89$ ,  $p = 0.009$ ;  $M_{\text{neutral}} = 3.63$  vs.  $M_{\text{broad}} = 3.21$ ). However, in the mass-market condition, competence perceptions did not differ significantly between the two smile conditions ( $M_{\text{neutral}} = 3.41$  vs.  $M_{\text{broad}} = 3.45$ ,  $p = 0.89$ ). Notably, a complementary analysis with

PROCESS<sub>4.3.1</sub> (Model 8; 10,000 iterations) (Hayes 2017) indicated no significant mediation effect of the expresser's competence in the mass-market condition ( $\beta = 0.05$ ,  $SE = 0.025$ ,  $CI_{95\%} = [-0.01, 0.09]$ ).

Conjointly, the lack of a significant smile intensity effect in mass-market condition indicates that smile intensity has limited diagnostic value when functional product attributes primarily drive the decision-making process (Jestratijevic, Uanhoro, and Rana 2024). A plausible account for this finding is that low consumer involvement with mass-market products may cause consumers to pay minimal attention to facial expressions in advertising (Septianto, Kemper, and Northey 2023), diminishing the weight on competence cues such as neutral expressions. Alternatively, this outcome can be illuminated by the prominence of verbal signals (e.g., discounts) in mass-market product communication (Amatulli, De Angelis, and Donato 2020) and the precedence of factors such as useableness (Kim and Phua 2020) on the decision-making criteria for these products.

## 9 | General Discussion

In physical and digital channels, many luxury brands heavily rely on ad models to cultivate and sustain a distinct brand image that radiates exclusivity and high status. These models become the face of the brand, personifying its core values and communicating its identity. However, not all adverts featuring models achieve the same level of success. Some generate substantial engagement, while others fail to do so. What then differentiates the more captivating luxury ads from the less effective ones? Building upon the key tenets of pivotal works on the nonverbal communication of emotions (DePaulo 1992; Ekman 1993; Ekman and Oster 1979; Keltner and Kring 1998), this research presents a novel perspective to this inquiry, focusing on how the intensity of smiles influences the success of luxury ads.

Across six preregistered studies, we demonstrated the detrimental impact of smile intensity on the effectiveness of luxury advertising. Study 1 utilized Instagram field data, showing that neutral facial expressions (vs. slight and broad smiles) led to higher ad engagement scores. Studies 2a and 2b replicated the detrimental effect of smile intensity using large-scale Meta A/B testing across the US and China, revealing higher click-through rates and lower cost-per-clicks for luxury ads featuring neutral expressions. Study 3 identified the causal mechanism through perceived competence and ad credibility and found that the detrimental effect of smile intensity on luxury ad attitudes and purchase intentions was more pronounced among high lay rationalistic consumers. Study 4 further established that the effect of smile intensity is moderated by the expresser's gaze direction, with neutral expressions enhancing luxury ad effectiveness when paired with direct gaze. Finally, the supplementary study supported that this detrimental effect is exclusive to luxury products, ruling out alternative explanations (e.g., brand personality differences) and showing no comparable effect for mass-market products. Analyzing smiles through the lens of both the expresser's behavior and the observer's psychology, the collective findings reported thus far have significant implications for theoretical, methodological, and managerial aspects.



## 9.1 | Theoretical and Methodological Implications

This work theoretically contributes to the facial expressions of emotions and adds to the luxury marketing literature in multiple ways. Past research in nonverbal marketing has usually linked smiling with positive emotional experiences (e.g., joy, pleasantness) (Berg, Söderlund, and Lindström 2015; Kulczynski, Ilicic, and Baxter 2016) and intrinsic motivation (Cheng, Mukhopadhyay, and Williams 2020). Nonetheless, the interpretation of a smile is greatly influenced by its specific type and the context of its expression. Surprisingly, the role of smiles and their felt emotional intensity in luxury product advertising has remained a drastically under-researched area of inquiry. Extending the scope of the social-functional perspective of emotions (Fridlund 1992; Keltner and Haidt 1999; Mueser et al. 1984) and advancing upon the preceding nonverbal marketing literature (Chen and Wyer 2020; Kidwell and Hasford 2014; Kulczynski, Ilicic, and Baxter 2016; Trivedi and Teichert 2019), we present the first empirical evidence showing that the intensity of a smile acts as a visual deterrent to the effectiveness of luxury advertising.

In undertaking this endeavor, we cultivate a more nuanced view of the dark side of broad smiles and the boomerang effect of smile intensity in still images, which lead to downstream consequences in the taxonomy of luxury consumer engagement. Counterintuitively, our research establishes applicability of this effect across a wide range of model, ad, brand-related covariates, spanning distinct products and different brands in Western and Asian samples. Given that the burgeoning literature in influencer marketing and luxury branding has predominantly concentrated on topics such as celebrity endorsements (Carrillat and Ilicic 2019), message framing (Amatulli, De Angelis, and Donato 2020), customer attachment (Shimul and Phau 2022), cultural barriers (Zhou et al. 2021), and B2C environments (Cartwright, Liu, and Davies 2022), our work enriches this transformative stream of research by ratifying the critical role of facial expressions in luxury communication strategies.

Furthermore, our epistemological knowledge is quite limited regarding how varying degrees of facial cues can influence social evaluations (for an exception, see Wang et al. 2017). Augmenting the predictive power of the stereotype content model (Fiske et al. 2002; Judd et al. 2005; Min and Hu 2022) within the luxury setting, we are among the first to systematically link perceived competence and ad credibility as dual dynamics behind the pernicious impact of smile intensity. Since existing stereotype content model literature has insofar remained silent on potential boundary factors that modulate the strength of competence judgments, our research explicates how direct gaze and high lay rationalism can facilitate stronger perceptions of competence by interacting with neutral expressions. In this way, we add to the shared signal hypothesis (e.g., Wang et al. 2018) and contribute to the growing corpus of research concerning the congruence between facial cues of expressers and consumers' personalities (e.g., Shuqair et al. 2024).

Moreover, previous research has continually focused on the isolated impact of eye gaze within the fields of neuropsychology and social psychology (Madipakkam et al. 2019; Shen and

Rao 2016). The direct implications of gaze direction in luxury marketing have received no attention to date and we are the first to establish the moderating role of eye gaze as a strategic nonverbal element influencing consumers' ability to interpret luxury advertising. Expanding on the initial theorization of To and Patrick (2021), this research deepens our understanding of the joint persuasive effects of smile intensity and gaze direction in fostering greater engagement, favorable ad attitudes, and purchase intent. Simultaneously, we illuminate our original knowledge about the lay notion of rationality among luxury consumers. Contributing to this line of empiricism, we demonstrate the key utility of the lay rationalism construct (Hsee et al. 2015) in the smile intensity domain by elucidating how this specific mode of thinking affects consumers' ability to decipher facial signals during the engagement-based luxury decision-making. In this manner, we responded to the call from Cheng, Mukhopadhyay and Williams (2020) and enriched the dialogue on the trade-off between affect and cognition in consumer responses to facial behaviors. Our findings regarding the moderating role of lay rationalism are espoused by extant consumer research (Bengart and Vogt 2023; Wang et al. 2020), adding new evidence that high lay rationalistic consumers, known for their need for cognition and rational deliberation, are more receptive to neutral expressions.

Additionally, the inclusion of lay rationalism as a boundary condition fills a gap in the luxury marketing literature, which has primarily focused on surface-level interpretations of facial signals (e.g., Zhu et al. 2022). In response, we provide deeper insights into how personality traits influence the reception of facial expressions. Our research aligns with Kahneman (2003) dual-process theory and presents a new perspective on how consumers' interpretive frameworks (i.e., cognitive-affective processing tendencies) vary when exposed to different smile intensities in luxury ads. From a theoretical standpoint, our findings signal that high lay rationalistic consumers may be less affected by the emotional contagion effects illuminated by the facial feedback hypothesis (Shuqair et al. 2024), where facial expressions (e.g., broad smiles) trigger mirrored emotional responses. Instead, these consumers tend to focus on the analytical implications of facial cues, which aligns with the stereotype content model's emphasis on competence in luxury branding (Septianto, Seo, and Zhao 2022).

Beyond theoretical ramifications, we make three methodological contributions. First, earlier research derived their inferences solely from fictitious ads (Kulczynski, Ilicic, and Baxter 2016), small participant pools (Berg, Söderlund, and Lindström 2015), and used convenience samples that included a wide range of backgrounds, such as college students, many of whom had minimal or no experience with luxury products (Zhu et al. 2022). This approach, recently criticized by Essiz and Senyuz (2024), fails to truly reflect the characteristics of the luxury consumer market. To rectify, this research utilized both real and fictitious ads on large-scale representative samples, allowing us to derive generalizable outcomes with a lower margin of sampling errors. Second, our research is among the first to employ a multi-method approach, including Instagram field data, Meta field experiments, and controlled experiments. This approach departs from all prior research on smile intensity, which relied on online experiments and was not conducted

in naturalistic or commercial settings (e.g., Trivedi and Teichert 2019; Wu, Ou, and Li 2020; Yao et al. 2022). Finally, this work goes beyond recent smile intensity research (Kim and Read 2022; Shuqair et al. 2024) by operationalizing a more comprehensive set of self-reported and behavioral dependent variables.

## 9.2 | Managerial Implications

Human faces, with their easily alterable expressions, are effective tools in marketing communications for capturing visual attention. Luxury communication strategists can utilize our research insights to convey their brand values and motivate behavioral changes among consumers by experimenting with the facial cues presented in ads. A key practical takeaway from our findings is that marketers should consider ad models' smile intensity and gaze direction as strategic visual devices to augment advertising success. To attain higher engagement rates, we caution them to capitalize on neutral expressions and direct gazes, as this can enhance the appeal of competence and bolster the ad's perceived credibility. Nevertheless, they need to be cognizant not to include false claims and deceptive smiles in their ads, as it could undermine the effectiveness of facial signals and lead to biased product perceptions (Cheng, Mukhopadhyay, and Williams 2020). This, in turn, might result in negative word-of-mouth among consumers and reduce overall brand engagement. Consistent with the results of our Instagram study, harnessing social proof through endorsements from high-profile celebrities and collaborative branding efforts can aid in alleviating these concerns—a postulation in line with the findings of Kulczynski, Ilicic and Baxter (2016). While marketers cannot alter consumers' previous knowledge about the relationship between endorsers and the brand, they can shape perceptions of an endorser's competence through nonverbal impression management and promotional activities. Such efforts to enhance the perceived competence of endorsers can effectively signal the prestige value of the product (Chen and Wyer 2020).

The current findings from Instagram field data and Meta field studies indicate that neutral expressions outperform broad smiles in terms of total engagement (e.g., likes, comments), click-through rates, and cost-per-click, suggesting that luxury brand managers should favor these expressions in performance-driven advertising. On such social media platforms where facial visual cues are vital (To and Patrick 2021), using neutral expressions in static image ads or as default thumbnails can help boost engagement and conversion rates while minimizing ad spend inefficiencies. Additionally, our results advocate for A/B testing of facial expressions in luxury ad campaigns. Considering the diverse preferences of consumer segments, luxury brands should leverage data-driven machine learning methods (e.g., see Oc et al. 2023) to detect the most effective expressions for their target audience. However, our findings caution that using neutral expressions for mass-market products may not be as effective in driving purchase intentions.

Another viable nonverbal communication strategy could involve the metaverse, owing to its substantial capacity to revolutionize interactions between brands and consumers

(Dwivedi et al. 2023). In the new era of Marketing 6.0, so-called “Metamarketing” (Kotler, Kartajaya, and Setiawan 2023), we advocate luxury brands to intensify their use of sensory inputs and blockchain-certified non-fungible tokens in their virtual advertising strategies. Within this immersive environment, they can effectively convey the power of neutral facial expressions and foster receptivity among users. In luxury store settings, we advise frontline employees, who serve as brand ambassadors, to maintain a neutral expression and sustain direct eye contact with consumers to signal the perception of competence and create an aura of exclusivity. Along these lines, marketers are recommended to follow a pull marketing strategy and utilize augmented reality ads in physical stores to establish an appealing atmosphere, where consumers can view models displaying luxury products with controlled smiles and gaze expressions.

Considering the prevalence of emotional contagion among young millennial and Gen Z luxury consumers on social media platforms (Shuqair et al. 2024), our findings do not fully urge marketers to abandon the use of broad smiles. Rather, the choice of smile intensity should further align with the brand's positioning strategy and pre-defined marketing objectives. In agreement with our findings, broad smiles, particularly when combined with averted gazes, can still evoke positive ad attitudes and purchase intent, making this method potentially suitable for luxury brands seeking to portray themselves as approachable, carefree, and accessible. For example, brand activism narratives can be powerful a tool for creating emotional bonds through nonverbal facial frames and may serve well in achieving this objective (To and Patrick 2021; Xie, Wei, and Chen 2024). By integrating averted gaze and broad smiles into engaging brand narratives, luxury brands can create memorable ads. These narratives can transmit the joy and satisfaction derived from owning and using luxury products via facial signals, making the experience seem more real and appealing. What is more, incorporating broad smiles alongside peripheral-route persuasion techniques can convey psychological proximity, which describes the sense of closeness or familiarity that consumers experience with a brand (Connors et al. 2021). When brands are perceived as psychologically near, consumers tend to feel more connected and loyal to them (Scharfenberger et al. 2023). After all, it is imperative for marketers to delve into the advertising contexts under which luxury product categories are more susceptible to the impact of broad smiles and averted gazes.

Last but not least, congruent facial expressions of models ought to be synchronized with the target audience's propensity to base decisions on reasons or feelings in segmenting the market. For neutral expression ads, high lay rationalist consumers may be primed to rely more on concrete product information without appealing to affective displays. Although not detailed previously, our datasets from Studies 3 and 4 indicated that men, individuals with higher education, older adults, and those with higher incomes tend to exhibit greater lay rationalism scores compared to their counterparts. For this demographic group, luxury ads that employ central-route persuasion emphasizing the product's functional value are likely to be more effective. In physical markets, applying machine learning techniques to personalize ads at the digital point of sale is a practical way to

achieve this target. Ringbeck, Seeberger and Huchzermeier (2019) have shown that machine learning algorithms can detect lay rationality levels based on consumers' click and browsing patterns. Luxury retailers can leverage past click-stream data to automatically customize the expressions of smiles and gazes on their websites, matching them with the lay rationalism level of consumers. This would require examining previous luxury purchases of consumers, considering how they weight hedonic and utilitarian dimensions because these two product aspects involve a trade-off between emotions and rationality (Hsee et al. 2015). Finally, to attract consumers with low level of rationality, marketers can highlight the affective appeal of luxury products by featuring expressers with broad smiles and averted gazes in Instagram and Meta ads aimed at audiences in the US and China (Orazi and Johnston 2020).

### 9.3 | Limitations and Future Research Avenues

The present research while comprehensive is not without limitations, which lay the groundwork for future avenues. Mainly, this research concentrated on smiles and gaze direction due to their omnipresence in marketing communications. However, competence perceptions of observers can be altered in the presence of other physical nonverbal cues, such as gestures, haptics, head, and body movements (Zhang et al. 2024; Zhu et al. 2022). Likewise, negative facial expressions (e.g., fear, anger, sadness) (Coleman and Williams 2013) and aesthetics of the smile (e.g., tooth shape and size) (Thi Nhat Nguyen et al. 2024) are recognized to influence personality judgments in interpersonal contexts. Also, future luxury research may study other types of smiles (e.g., Duchenne smiles, see Cheng, Mukhopadhyay, and Williams 2020) and less common facial expressions, such as surprise.

Further, this research found that high-intensity emotional displays, such as broad smiles, often lead to negative evaluations of the expresser, primarily because such intense emotions are perceived as inappropriate in luxury settings, which diminish perceived competence (Zhu et al. 2022). However, in other consumption scenarios, like sustainable tourism, where warmth, closeness, and a sense of attachment to the brand are valued, intense facial expressions may be more suitable and align better with expected display rules (Ekman 1993; Pankiw, Phillips, and Williams 2021). Given that the interpretation of nonverbal signals is highly context-dependent (Kraus and Chen 2013; Van Kleef 2009), we do not claim that high-intensity facial expressions are unanimously harmful. Rather, we posit that the impact of these expressions is shaped by the consumption context, geographical context, and the perceived appropriateness of the displays.

In addition, we used static print ad images over dynamic portrayals to maintain the clarity of our manipulations. Future research (using field and neural data via functional magnetic resonance imaging: fMRI, Casado-Aranda, Sánchez-Fernández, and Viedma-del-Jesús 2022) is encouraged to understand neural mechanisms behind facial signals and test the replicability of our findings in video contexts. Alternatively, researchers can capture implicit and explicit measurement of facial emotions in luxury ads using the Noldus FaceReader software (e.g.,

Landmann 2023). We anticipate that the detrimental smile intensity effect might be more pronounced in video ads because the interactive nature of these ads makes it more challenging to prevent the induction of positive facial expressions. Interestingly, one may also examine how evaluations of competence derived from facial cues and perceived credibility might be corrected upon introducing additional personal information about the expresser in video ads.

Another limitation of this research is that it merely assessed the immediate impact of facial expressions on consumer reactions to luxury products. Here, the observed effects are occurring following exposure to facial expressions. Future research should investigate the long-term effects of these expressions on aspects such as customer attachment (Shimul and Phau 2022). In line with this limitation, the present findings could be influenced by the egocentric bias, which suggests that individuals tend to overrate their abilities in making initial judgments (Ross, Greene, and House 1977). Therefore, observers might overestimate their capacity to differentiate between deliberate and spontaneous smiles, despite not being as expert at this distinction as they believe.

Next, the generalizability of our findings may be limited by the specific luxury products we investigated. Although this research covered a variety of luxury products, including jewelry, watch, sunglasses, bag, and makeup, future research could expand this scope to other luxury categories like real estate or high-end automobiles. In these segments, facial expressions play a significant role in consumer satisfaction (Choi, Choi, and Mattila 2020), which will allow researchers to assess whether the observed effects are consistent across different areas of the luxury market. What is more, as our sample is drawn from the US and China, our findings are intrinsically linked to their market maturity. Hence, extrapolating these findings to other luxury markets without considering their distinctive growth structures and demographic traits could lead to misinterpretations. To enhance the generalizability of our proposed framework, it is essential to carry out cross-national comparisons between high and low context cultures (e.g., using quasi-experiments or qualitative designs). For instance, future research could investigate if the adverse effects of broad smiling persist or attenuate in the context of sustainable luxury hospitality and tourism, where delivering warmth is critical. It would be equally intriguing to scrutinize the influence of smile intensity on virtual influencers (Gerrath et al. 2024) and other conceptually pertinent variables (e.g., brand intimacy, brand recall, electronic word-of-mouth, and willingness to pay a price premium) (Bergner, Hildebrand, and Häubl 2023; Oc et al. 2023).

Methodologically, using artificial neural networks (Essiz and Senyuz 2024) may offer windows of opportunity to pinpoint probable reasons behind the differing degrees of non-linear effect sizes associated with smile intensity. While this research employs symmetric analytical methods suitable for experimental data, it does not explore the potential of asymmetric case analysis. Future research could apply fuzzy-set qualitative comparative analysis (fsQCA) (e.g., Petrescu et al. 2024) to investigate equifinal configurations and decision-making scenarios involving varying intensities of facial expressions,

measured on a continuous scale, based on their relevance to consumers in luxury advertising. With that goal, researchers could expand on the present findings by developing a revisiting paper that utilizes asymmetric testing of smile intensity grounded in complexity theory (e.g., Woodside, Prentice, and Larsen 2015).

Although we established lay rationalism and gaze direction as theoretical moderators, future research is needed to unpack interaction effects of other conceivable boundary variables such as message framing (negations vs. affirmations) (Septianto, Kemper, and Northey 2023), the big five personality traits (Chakraborty et al. 2023), intrinsic motivations (Cheng, Mukhopadhyay, and Williams 2020), endorsement type (hedonic vs. utilitarian) (Shuqair et al. 2024), regulatory focus of consumers (promotion vs. prevention) (Wang et al. 2017), and social media platform characteristics (Voorveld et al. 2018). While this research has centered on analyzing gaze direction in terms of direct or averted relative to the observer, it would be a fruitful progression to explore how the expresser's gaze orientation—the left, right, or at the product—and the biological features of the eyes (e.g., color, limbal rings) influence consumer responses to ad campaigns. Another intriguing research direction could involve examining the influence of the expresser's gaze direction on consumers' visual processing and their subsequent behavioral responses in luxury advertising contexts (e.g., Wang et al. 2018). Ultimately, consumer reactions to nonverbal advertising elements are often molded by the influence of family values and household members (Essiz and Mandrik 2022). To further generalize our predicted effects, it is cardinal to undertake empirical studies that probe intergenerational boundaries in the socialization process of luxury consumers.

## 10 | Concluding Remarks

Firms continue to use models with smiling faces in their ads to foster a positive atmosphere. Previous studies have supported the conventional belief that broader smiles are more effective at generating consumer satisfaction and enhancing sales (Barger and Grandey 2006; Choi, Choi, and Mattila 2020; Min and Hu 2022; Pugh 2001). In the dynamic realm of luxury marketing, our six preregistered studies originally cast doubt on the applicability of these conclusions and demonstrated the opposite: that bigger smiles do not always yield better outcomes. As in, we expound how neutral expressions can heighten the perceived competence of the expresser and ad credibility. This effect is contingent on the lay notion of rationality and gaze direction. These inferences impact behavioral responses including ad engagement, click-rates, ad attitudes, and purchase decisions, all of which present crucial repercussions for luxury brand marketers. Given the scarcity of research focused on nonverbal behaviors in luxury consumption and considering that consumers recurrently make judgments about models based on their cognitive and emotional expressions, we sincerely aspire that this investigation will serve as a springboard for consumer psychologists to delve deeper into the implications of these constructs on multifaceted consumer behavior patterns. After all, as Mlodinow (2012, p.138) vividly observes, “*Nonverbal communication forms a social language that is in many ways richer and more fundamental than our words.*”

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## Ethics Statement

In this research, all procedures involving human participants were conducted following the ethical standards of the institutional and/or national research committee and with the 1964 Helsinki Declaration and its later amendments or with comparable ethical standards. Informed consent forms were obtained from all individual participants included in the study.

## Conflicts of Interest

The authors declare no conflicts of interest.

## Data Availability Statement

The data that support the findings of this study are available from the corresponding author upon reasonable request.

## Data Collection Information

Five main studies were collected by the first author in 2023. Study 1 (between August–September 2023), Study 2a (September 2023), Study 2b (November 2023), Study 3 (October 2023), and Study 4 (November 2023). One more supplementary study was collected by the first author in November 2024.

## Endnotes

<sup>1</sup>See the following examples from Prada® featuring direct ([instagram.com/p/CyTEgozLlx/](https://www.instagram.com/p/CyTEgozLlx/)) and averted ([instagram.com/p/CyQftGPuB5H/](https://www.instagram.com/p/CyQftGPuB5H/)) gaze in luxury marketing campaigns.

<sup>2</sup>Note that past literature has largely focused on the valence-based contrasts between neutral expressions and broad smiles when quantifying smile intensity. These two facial cues provide clear conceptual distinctions and are readily discernable in terms of their pronounced cognitive and emotional impacts on observers (Kulczynski, Ilicic, and Baxter 2016; Wu, Ou, and Li 2020). Although we plan to control the roles of slight smiles, our conceptual focus revolves around the dichotomy between neutral expressions and broad smiles.

<sup>3</sup>Even though our primary interest lies in analyzing competence judgments, we will still account for the potential effect of warmth conferrals in our experimental designs.

<sup>4</sup>Note that this definition does not treat reason and feelings as antagonistic factors. In certain decision-making scenarios, consumers may simultaneously rely on reason and feelings; however, the relative utility placed on these factors is expected to differ from one person to another.

<sup>5</sup>To determine the direction of gaze, coders adhered to the approach of To and Patrick (2021), posing the question: What is the gaze direction of the expresser in this ad?—classifying it as either direct (looking at the observer) or averted (looking away from the observer). Of the 435 ads coded, 64.2% (280) featured direct gaze, whilst 35.8% (155) had averted gaze.

<sup>6</sup>We observed no marginal variations in the mean of TES between the neutral expressions and slight smile ads ( $t(284) = 0.57, p = 0.56$ ).

indicating a negligible difference between these two conditions. To enhance methodological rigor, we concentrated our efforts on the dichotomy between neutral expressions and broad smiles for the following phases. This decision is in line with our conceptualization and early works (Berg, Söderlund, and Lindström 2015; Chen and Wyrer 2020; Warren, Pezzuti, and Koley 2018) that predominantly concentrated on the distinctions between smiling and non-smiling expressions. It streamlines our experimental designs and ensures more interpretable results, thus eliminating potential confounds introduced by the intermediate slight smile condition.

<sup>7</sup>Using the PROCESS<sub>4.3.1</sub> Model 4 with 10,000 bootstrap iterations (Hayes 2017), we observed no significant indirect effect of the expresser's perceived competence on the relationship between smile intensity and TES ( $\beta = -0.05, p = 0.19$ ). At this juncture, this non-significant result is particularly illuminating and aligns with our theoretical prediction, **H<sub>2b</sub>**, underscoring the necessity of delving into a more intricate serial mediation model.

<sup>8</sup>Due to the complexities involved in accurately translating multilingual comments, we focused solely on English comments to ensure consistency in our text analysis, while acknowledging this as a limitation in terms of language inclusivity.

<sup>9</sup>The reader is advised to refer to the LIWC-22 primer of Boyd et al. (2022) for detailed conceptualizations of selected psycholinguistic dimensions.

<sup>10</sup>Compared to other platforms (e.g., MTurk), Prolific® participants have been shown to be more attentive to instructions and more honest in their responses (Peer et al. 2022).

<sup>11</sup>Jewelry, being universally accepted as a symbol of status and wealth, serves as an ideal luxury product type for this study (Pankiw, Phillips, and Williams 2021). Its use can offer valuable practical insights directly relevant to the global luxury market segment.

<sup>12</sup>The unique CTR is a commonly utilized behavioral measure for evaluating ad performance. It captures the ratio of clicks an ad receives from different individuals reached, excluding any overlaps (Orazi and Johnston 2020). It assists us in eliminating biases that may arise from repetitive clicks or the ad being displayed unevenly to different individuals. Throughout the 1-week study period, we implemented a frequency cap to ensure that each unique individual was assigned to a single ad condition.

<sup>13</sup>We used a brand name generator tool ( **durable. co/name-generator**) to formulate the fictional brand names reported in Studies 2a and 3, ensuring that there were no biases from the influence of pre-existing brand names. In spite of its methodological strengths, we recognize that using a fictional brand may limit the generalizability of our findings. We addressed this concern by using the real luxury brand in Study 2b.

<sup>14</sup>China was chosen for its status as the world's second-biggest market for personal luxury goods after the US (Statista 2023a), and for its distinct cultural traits when compared to the US, as illustrated in Hofstede's six cultural dimensions. For a detailed examination, the reader is further directed to the comparison chart at **hofstede-insights.com/country-comparison-tool?countries=china%2Cunited+states**.

<sup>15</sup>Past research in luxury marketing has identified sunglasses as a suitable product stimulus, encouraging the current study to utilize them due to their utilitarian, hedonic, and symbolic attributes (Shimul and Phau 2022).

<sup>16</sup>Although similarities were observed in the positive impact of neutral expressions on click-through actions among American and Chinese users, this effect was stronger in the latter group (OR: 1.49<sub>US</sub> vs. 1.79<sub>China</sub>). This finding fortifies previous research suggesting that Chinese individuals are more receptive to neutral expressions than Americans (Wang et al. 2018). While differences in sample sizes and cultural contexts were noted in Studies 2a and 2b, the observed variance might also be attributed to factors such as cognitive

processing of observers (Bengart and Vogt 2023), arousal levels (Yao et al. 2022), or perceptions of psychological distance (Zhu et al. 2022). However, delving into the reasons behind such cross-national disparities was neither feasible with the split testing option nor the primary objective of this research.

<sup>17</sup>The choice of a watch as the main luxury product for this study was determined based on its global public significance in the market. Luxury watches not only carry symbolic meaning but also signify status and prestige (Shimul and Phau 2022).

<sup>18</sup>In the MANCOVA, authenticity of the smile expression ( $F(1, 246)_{ad\ attitudes} = 0.71, p = 0.42$ ;  $F(1, 246)_{purchase\ intention} = 0.95, p = 0.31$ ), facial attractiveness ( $F(1, 246)_{ad\ attitudes} = 1.44, p = 0.25$ ;  $F(1, 246)_{purchase\ intention} = 0.99, p = 0.31$ ), trustworthiness of the smile ( $F(1, 246)_{ad\ attitudes} = 0.88, p = 0.37$ ;  $F(1, 246)_{purchase\ intention} = 1.10, p = 0.29$ ), perceived warmth ( $F(1, 246)_{ad\ attitudes} = 0.62, p = 0.44$ ;  $F(1, 246)_{purchase\ intention} = 0.84, p = 0.35$ ), ad realism ( $F(1, 246)_{ad\ attitudes} = 1.52, p = 0.23$ ;  $F(1, 246)_{purchase\ intention} = 1.13, p = 0.28$ ), product involvement ( $F(1, 246)_{ad\ attitudes} = 0.69, p = 0.40$ ;  $F(1, 246)_{purchase\ intention} = 0.54, p = 0.46$ ), age ( $F(1, 246)_{ad\ attitudes} = 0.21, p = 0.67$ ;  $F(1, 246)_{purchase\ intention} = 0.64, p = 0.43$ ), education ( $F(1, 246)_{ad\ attitudes} = 0.50, p = 0.47$ ;  $F(1, 246)_{purchase\ intention} = 0.92, p = 0.33$ ), and annual household income ( $F(1, 246)_{ad\ attitudes} = 1.52, p = 0.23$ ;  $F(1, 246)_{purchase\ intention} = 0.95, p = 0.31$ ) did not have a significant effect on ad attitudes and purchase intention, suggesting that our results were robust to differences in these covariates.

<sup>19</sup>To rule out alternative explanations, we also tested the possibility of all covariates (except demographics) to act as mediators on the relationship between (smile intensity and ad attitudes)—(smile intensity and purchase intention) by submitting them into series of PROCESS<sub>4.3.1</sub> (Model 4s;  $n = 10,000$  bootstrap iterations) (Hayes 2017). In all cases, the indirect bias-corrected bootstrap estimates had CIs<sub>95%</sub> that encompassed zero, showing that mediation effects were not significant ( $p \geq 0.11$ ).

<sup>20</sup>The reported moderated serial mediation models align with the criteria for “meaningful mediation analysis” set forth by Pieters (2017, p.697). Multicollinearity was found to be non-problematic in both models ( $VIFs \leq 2.67$ ).

<sup>21</sup>All other indirect paths were not significant, as their CIs<sub>95%</sub> included zero: (smile intensity  $\rightarrow$  perceived competence  $\rightarrow$  ad attitudes;  $\beta_{first\ model} = 0.03, SE = 0.05, CI_{95\%} = [-0.06, 0.12]$ ), (smile intensity  $\rightarrow$  ad credibility  $\rightarrow$  ad attitudes;  $\beta_{first\ model} = 0.04, SE = 0.04, CI_{95\%} = [-0.04, 0.11]$ ), (smile intensity  $\rightarrow$  perceived competence  $\rightarrow$  purchase intention;  $\beta_{second\ model} = 0.05, SE = 0.04, CI_{95\%} = [-0.03, 0.13]$ ), and (smile intensity  $\rightarrow$  ad credibility  $\rightarrow$  purchase intention;  $\beta_{second\ model} = 0.03, SE = 0.03, CI_{95\%} = [-0.02, 0.09]$ ).

<sup>22</sup>We have chosen to focus on handbags because they represent a primary product line for most luxury fashion brands (Essiz and Senyuz 2024).

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## Appendix A

### Measures. Note. Factor loadings are placed in parentheses

#### Ad attitudes (5 items) (To and Patrick 2021)

Indicate your attitude towards the ad you just saw:

1. Unfavorable/favorable (0.94<sub>Study 3</sub>, 0.95<sub>Study 4</sub>).
2. Negative/positive (0.93<sub>Study 3</sub>, 0.94<sub>Study 4</sub>).
3. Bad/good (0.93<sub>Study 3</sub>, 0.94<sub>Study 4</sub>).
4. Unpleasant/pleasant (0.93<sub>Study 3</sub>, 0.95<sub>Study 4</sub>).
5. Dislike/like (0.93<sub>Study 3</sub>, 0.94<sub>Study 4</sub>).

#### Purchase intention (3 items) (Dodds, Monroe, and Grewal 1991)

Indicate your purchase intention for the promoted product (1 = very low; 5 = very high):

1. The likelihood of purchasing the promoted product is (0.93<sub>Study 3</sub>, 0.96<sub>Study 4</sub>, 0.96<sub>Supplementary study</sub>).
2. The probability that I would consider buying the promoted product is (0.94<sub>Study 3</sub>, 0.97<sub>Study 4</sub>, 0.95<sub>Supplementary study</sub>).
3. My willingness to buy the promoted product is (0.92<sub>Study 3</sub>, 0.95<sub>Study 4</sub>, 0.94<sub>Supplementary study</sub>).

#### Perceived competence (4 items) (Wang et al. 2017)

Indicate the extent to which the model appears (1 = not at all; 5 = very much so):

1. Competent (0.94<sub>Study 3</sub>, 0.94<sub>Study 4</sub>, 0.95<sub>Supplementary study</sub>).
2. Capable (0.95<sub>Study 3</sub>, 0.95<sub>Study 4</sub>, 0.94<sub>Supplementary study</sub>).

3. Skillful (0.92<sub>Study 3</sub>, 0.94<sub>Study 4</sub>, 0.96<sub>Supplementary study</sub>).
4. Intelligent (0.91<sub>Study 3</sub>, 0.92<sub>Study 4</sub>, 0.93<sub>Supplementary study</sub>).

#### **Ad credibility (7 items)** (Sarofim and Cabano 2018)

Indicate the extent to which you found this ad (1 = not at all; 5 = very much so):

1. Credible (0.83<sub>Study 3</sub>, 0.83<sub>Study 4</sub>).
2. Realistic (0.77<sub>Study 3</sub>, 0.80<sub>Study 4</sub>).
3. Convincing (0.90<sub>Study 3</sub>, 0.91<sub>Study 4</sub>).
4. Persuasive (0.89<sub>Study 3</sub>, 0.92<sub>Study 4</sub>).
5. Important (0.84<sub>Study 3</sub>, 0.89<sub>Study 4</sub>).
6. Meaningful (0.83<sub>Study 3</sub>, 0.91<sub>Study 4</sub>).
7. Relevant (0.86<sub>Study 3</sub>, 0.89<sub>Study 4</sub>).

#### **Lay rationalism (6 items)** (Hsee et al. 2015)

Indicate your level of agreement with following statements (1 = strongly disagree; 5 = strongly agree):

1. When making decisions, I like to analyze financial costs and benefits and resist the influence of my feelings (0.77<sub>Study 3</sub>, 0.81<sub>Study 4</sub>).
2. When choosing between two options, one of which makes me feel better and the other better serves the goal I want to achieve, I choose the one that makes me feel better (0.89<sub>Study 3</sub>, 0.76<sub>Study 4</sub>).
3. When making decisions, I think about what I want to achieve rather than how I feel (0.71<sub>Study 3</sub>, 0.72<sub>Study 4</sub>).
4. When choosing between two options, one of which is financially superior and the other “feels” better to me, I choose the one that is financially better (0.72<sub>Study 3</sub>, 0.73<sub>Study 4</sub>).
5. When choosing between products, I rely on my gut feelings rather than on product specifications (numbers and objective descriptions) (0.79<sub>Study 3</sub>, 0.84<sub>Study 4</sub>).
6. When making decisions, I focus on objective facts rather than subjective feelings (0.74<sub>Study 3</sub>, 0.78<sub>Study 4</sub>).

#### **Smile strength manipulation and attention check (2 items)** (Wang et al. 2017)

1. How would you rate the strength of the model's smile? (1 = neutral expression; 5 = broad smile)
2. Is the model featured in this ad smiling or not smiling? (1 = smiling; 2 = not smiling)

#### **Eye gaze direction manipulation check (2 items)** (To and Patrick 2021)

1. Is the model featured in this ad looking at you or away from you? (1 = looking at me; 2 = not looking at me)
2. To what extent did you notice the direction of the model's eye gaze? (1 = not at all; 5 = to a great extent)

#### **Product type manipulation check** (Kim and Phua 2020)

- How exclusive do you consider the advertised brand's product to be? (1 = not at all; 5 = very exclusive)

#### **Facial attractiveness** (Wang et al. 2017)

- How would you rate the facial attractiveness of the model? (1 = not at all; 5 = very well)

#### **Authenticity of the smile** (Wang et al. 2017)

- How would you rate the authenticity of the model's smile expression? (1 = not at all; 5 = very well)

#### **Perceived prestige (Authors' own)**

- How would you rate the prestige of the model? (1 = not at all; 5 = very well)

#### **Perceived luxuriousness** (Amatulli, De Angelis, and Donato 2020)

- How would you rate the luxuriousness of the advertised brand? (1 = not at all; 5 = very much so)

#### **Product involvement** (Septianto, Kemper, and Northey 2023)

- Indicate your involvement in the promoted luxury product category: (1 = not at all; 5 = very involved).

#### **Brand familiarity** (Septianto, Kemper, and Northey 2023)

- How would you rate your familiarity with the promoted brand? (1 = not familiar at all; 5 = very familiar)

#### **Brand personality dimensions** (Melzner and Raghurir 2023)

Indicate the extent to which you found this brand (1 = not at all; 5 = very much so):

- Ruggedness (tough, strong, powerful, rugged).
- Sophistication (glamorous, sophisticated, prestigious, high-class).
- Competence (efficient, reliable, responsible, dependable).
- Excitement (daring, spirited, imaginative, up to date).
- Sincerity (honest, domestic, genuine, cheerful).

#### **Trustworthiness of the smile** (To and Patrick 2021)

- Indicate the extent to which the model's smile expression can be described as trustworthy (1 = not at all; 5 = very well).

#### **Perceived warmth** (To and Patrick 2021)

- Indicate the extent to which the model appears warm (1 = not at all; 5 = very well).

#### **Ad realism** (To and Patrick 2021)

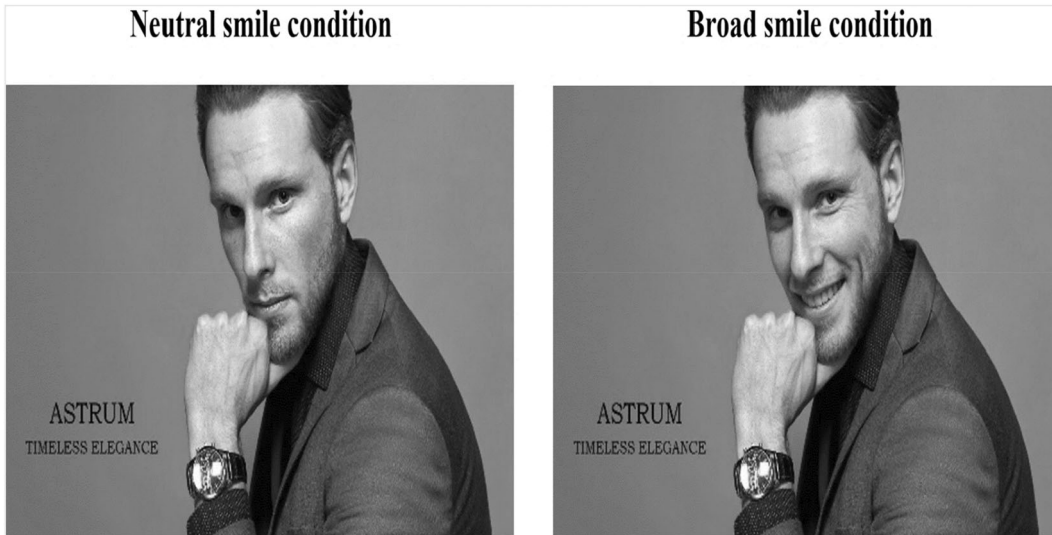
- Indicate the extent to which the ad looks realistic (1 = not at all; 5 = very well).

#### **Ad familiarity (Authors' own)**

- Did you see this ad before on social media platforms? (0 = no; 1 = yes)

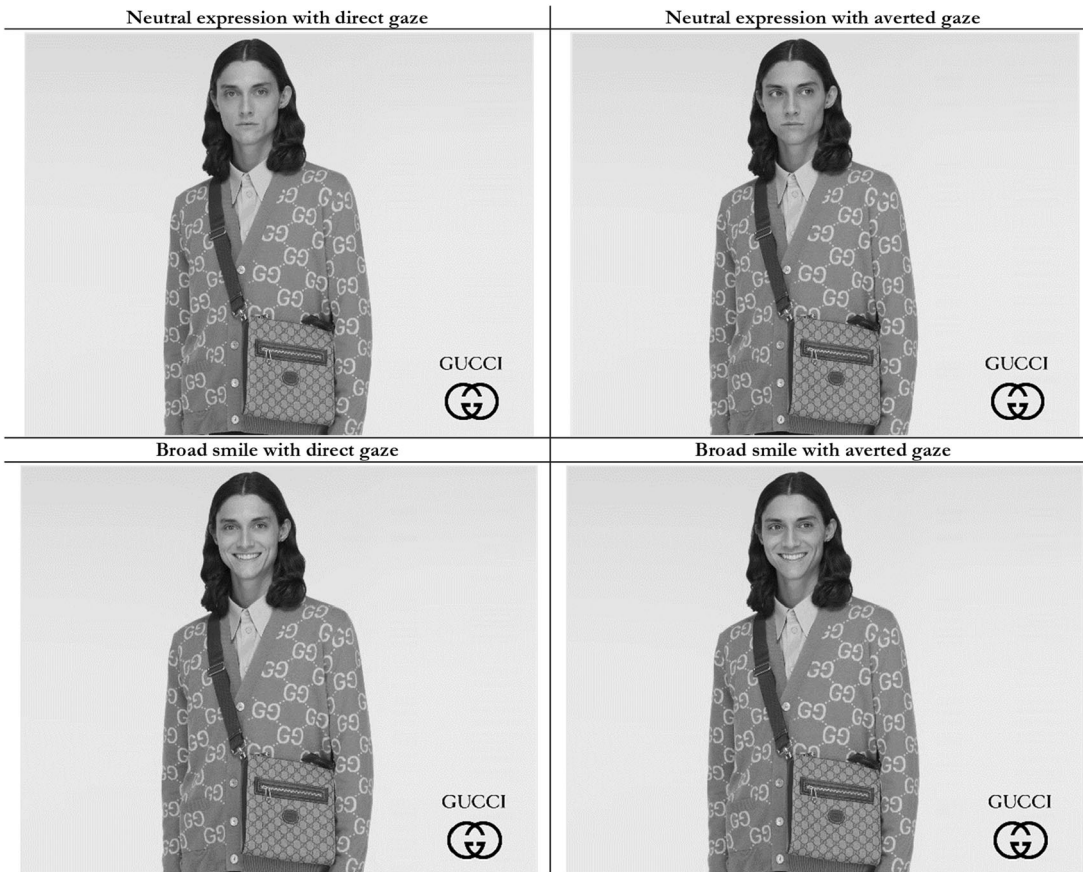
**Appendix B**

**Smile intensity manipulation in Study 3**



**Appendix C**

**Smile intensity and gaze direction manipulations in Study 4**



Appendix D

Smile intensity and product type manipulations in the supplementary study

