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Self-Enhancing Humor After Football Defeats: Effects on Fans' Emotion Regulation and Brand Attachment

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Abstract

Football fandom is characterized by intense emotional reactions, particularly following team defeats. As clubs increasingly use social media to communicate results, humorous messaging has emerged as a potential tool to diffuse negative emotions. This study investigated whether self-enhancing humor in post-defeat Instagram communication facilitates fans' emotion regulation and strengthens brand attachment, while considering the moderating role of fan identification. Four hypotheses were tested using an experimental between-subjects design with 223 football fans, in which a single experimental factor - humor condition (self-enhancing vs. neutral) - was manipulated. The results show that self-enhancing humor significantly improved emotion regulation after a loss. Although humor alone did not directly increase brand attachment, its effect on emotional coping indirectly enhanced attachment levels. Fan identification did not moderate the relationship between humor and emotion regulation, indicating that highly and lowly identified fans benefit similarly from humorous communication. These findings highlight humor's strategic value for clubs aiming to maintain positive fan-brand relationships after defeats.

Keywords: self-enhancing humor; emotion regulation; brand attachment; fan identification; football communication; social media

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Sumário

O futebol é amplamente reconhecido pelas fortes reações emocionais que desperta nos seus adeptos, sobretudo após derrotas. À medida que os clubes recorrem cada vez mais às redes sociais para comunicar resultados, o uso de humor pode constituir uma estratégia para suavizar emoções negativas. O presente estudo investigou se o humor auto-valorizador em publicações pós-derrota no Instagram facilita a regulação emocional dos adeptos e fortalece o apego à marca, considerando o papel moderador da identificação com o clube. Quatro hipóteses foram testadas através de um desenho experimental entre grupos com um fator (tipo de comunicação: humorística vs. neutra), envolvendo 223 adeptos distribuídos aleatoriamente pelas duas condições. Os resultados mostram que o humor auto-valorizador melhora significativamente a regulação emocional após uma derrota. Embora o humor não tenha aumentado diretamente o apego à marca, o seu efeito positivo sobre a regulação emocional fortaleceu indiretamente esse vínculo. A identificação com o clube não moderou estes efeitos, sugerindo benefícios semelhantes para adeptos com diferentes níveis de identificação.

Palavras-chave: humor auto-valorizador; regulação emocional; apego à marca; identificação com o clube; comunicação desportiva; redes sociais

Título: Humor Auto-valorizador Após Derrotas no Futebol: Efeitos na Regulação Emocional dos Adeptos e no Apego à Marca

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List of Abbreviations

C.F.....	<i>Club de Fútbol</i>
NFC.....	Need for Cognition
SBCs.....	Self-Brand connections

1. Introduction

1.1 Background

Professional football has experienced substantial growth in recent years, driven by increasing global interest, rising broadcasting revenues, and ongoing commercial expansion (Giulianotti, 2012; Yiapanas, 2025). Many elite clubs now leverage international markets through preseason tours in regions such as the United States and Asia, aiming to strengthen their global visibility and diversify revenue streams (Bundesliga, 2025; FC Bayern München, 2024). The financial valuation of top-tier clubs has surpassed one billion euros, illustrating the economic scale of the modern football industry (Teitelbaum & Knight, 2025; Yiapanas, 2025). Central to this development are fans, whose engagement forms a critical foundation for clubs' financial stability. Fan loyalty is typically strong and enduring, often persisting over a lifetime. However, defeats, particularly in high-stakes matches, can have significant consequences for both clubs and supporters. For clubs, failure to secure crucial results may jeopardize qualification for lucrative competitions or threaten relegation, with direct implications for future budgets, infrastructure investment, and player acquisitions (Hamdi et al., 2025; Mirkovic et al., 2025). For fans, such outcomes can evoke strong emotional reactions, as non-participation in top-tier or international competitions often results in the loss of high-profile players. Moreover, competing against weaker teams in lower leagues is generally perceived as less appealing than participation at the highest competitive level, thereby reinforcing the need for effective communication strategies to manage negative sentiment.

Parallel to that development, communication strategies and fan engagement have been on the rise as well. Most clubs now make use of the increased possibilities of fostering engagement and interaction via social media channels such as Instagram, TikTok, YouTube and more (Valcarce-Torrente et al., 2025). For example, Real Madrid Club de Fútbol (C.F) one of the biggest and most successful clubs in football has an Instagram following of 179 million (as of November 2025). Communication includes off pitch activities, challenges and overall following players also besides the 90 min they play. Fans are therefore able to almost constantly be surrounded in social media by their favourite club (Aghaei et al., 2025). Nonetheless, game day interaction is still part of the social media communications of football clubs as players arrivals, warm up, as well as scores during the match are communicated and shown almost instantly on social media. Yet football clubs do not embrace negative results as much. While

score communication does take place, the way it is currently done is by stating the score in a neutral manner.

In overall social media communications, the use of humor has increased in the past as well. Big commercial brands like Ryanair or Wendy's have been using humor in all sorts of interactions with users and have at least increased attention around their brand (Cooper & Schweitzer, 2025; Eisend, 2022; Kale & Sayin, 2024; Lutzky & Rundell, 2025; Paczelt & Visscher, 2025). While these examples match the research that humorous interaction in social media can create attention around your brand, the goal of football brands might not be that in particular. While attention around your brand will always be of importance, the relationship between fans and the club might be even more important in sports. To be particular, someone who flies Ryanair might find a post from them funny and therefore like the brand, but if another airline decreases the prices way below Ryanair, the person might still change (even though the brand is liked and was humorous). In football, this may be less likely to occur, making it a special case in which fans often continue to support the club despite painful losses, driven by factors such as nostalgia, geographical attachment, or identification with the club's values. Yet whether this is actually happening or if the attachment to the club is affected at all, has not been researched to such an extent.

1.2 Research Objectives and Questions

This thesis aims to examine how football clubs' use of self-enhancing humorous communication on Instagram following a defeat influences fans' emotional responses and brand attachment. More specifically, the study investigates whether humorous framing of a loss facilitates emotion regulation, which in turn enhances brand attachment, compared to neutral post-match communication. Additionally, this thesis considers fan identification as a potential moderator, assuming that individuals with stronger psychological ties to their favorite club may respond differently to humorous messaging following a defeat. Accordingly, the following research question will be examined:

RQ1:

How does self-enhancing humorous Instagram communication following a football club's defeat influence fans' emotion regulation and brand attachment?

Based on this, fan identification is incorporated to explore whether psychological connection to the club alters these effects, resulting in a second research question:

RQ2:

Does fan identification moderate the effect of humorous defeat-related Instagram communication on fans' emotion regulation?

1.3 Scope of the Study

This thesis focuses on the context of professional football clubs, as football is one of the most globally recognized and commercially developed sports. Football clubs maintain exceptionally large and highly committed fan communities, making them a particularly suitable context for examining emotional responses and fan–brand relationships. For instance, during the 2024–2025 season of the English Premier League, total stadium attendance exceeded 15 million spectators (transfermarkt.de, 2025), illustrating the substantial size and engagement of football fan communities.

The study specifically investigates the use of self-enhancing humor in post-defeat communication. Although other humor types exist (see Literature Review), self-enhancing humor was selected because prior research suggests it may facilitate emotion regulation and help individuals reinterpret negative events more positively (Da Costa Dutra et al., 2023; Kugler & Kuhbandner, 2015; Samson & Gross, 2012; Wu et al., 2021). Thus, this humor type offers strong theoretical grounding for examining its influence on fan responses.

Furthermore, the study limits its scope to a single social media platform. Instagram was chosen due to its high relevance for professional football clubs, which often maintain significantly larger followings on Instagram than on other platforms. For example, FC Bayern Munich has approximately 44 million followers on Instagram, compared to around 26 million on TikTok and 3.6 million on X. This environment therefore provides an appropriate setting to examine branded humorous communication embedded in realistic football-related social media contexts.

The scope is additionally narrowed to defeat-related posts, as defeats represent emotionally relevant events for fans and may meaningfully affect subsequent evaluations of the club. The study therefore explores whether presenting defeat through self-enhancing humor influences fans' emotional recovery and their attachment to the club.

1.4 Research Approach and Methods

This thesis follows a deductive research approach, beginning with a literature review that summarizes existing theories and empirical findings on humor in brand communication, emotion regulation, and fan-brand relationships. Based on these theoretical foundations, hypotheses were developed and tested through an online experiment, allowing for the collection of primary quantitative data. The experiment examined how football clubs' use of self-enhancing humorous communication following a defeat influences fans' emotion regulation and brand attachment, while considering fan identification as a moderating variable. Participants were exposed to an Instagram post of a football club either using a self-enhancing humorous caption or a neutral caption following a fictional defeat scenario. After viewing the stimulus, participants completed a questionnaire assessing their emotional responses, emotion regulation, and brand attachment toward the club. The independent variable was humor type (self-enhancing vs. neutral), while emotion regulation served as the mediator and fan identification as the moderator. Brand attachment represented the dependent variable. The study design thus allowed for the testing of both direct and indirect effects of humorous communication on fan-related outcomes.

H1: (Direct Effect)

Self-enhancing humor (vs. neutral) in Instagram posts by sport brands positively influences fans' emotion regulation after a defeat.

H2: (Mediation)

Emotional regulation mediates the relationship between humor type (self-enhancing vs. neutral) and brand attachment.

H3: (Direct Effect on Brand Attachment)

Self-enhancing (vs. neutral) in Instagram posts positively influences fans' brand attachment.

H4: (Moderation)

The positive effect of humor type (self-enhancing vs. neutral) on emotion regulation is stronger for highly identified fans than for lowly identified fans.

1.5 Relevance

This study is relevant because maintaining strong fan-brand relationships is crucial for the long-term commercial and cultural stability of professional football clubs, as revenues from ticket and merchandise sales are closely tied to these relationships. By investigating whether self-enhancing humor helps fans regulate their emotions following a defeat and subsequently strengthens brand attachment, the study contributes to research on humor in sport communication and emotion-driven marketing. Practically, the findings may guide football clubs in designing social media responses that help preserve fan engagement after losses. As noted, if a simple, low-cost intervention such as humorous post-match communication proves effective, it offers a strategically attractive approach for clubs to implement in order to cope with fans' emotional reactions after defeats.

1.6 Dissertation Outline

Chapter 1 introduces the research topic, outlines the development of sport-brand social media communication, and highlights the growing relevance of humor in post-defeat messaging. It presents the research problem, objectives, and questions, describes the study scope, and discusses the theoretical and practical relevance. Chapter 2 provides a detailed literature review on humor types in marketing communication, emotion regulation, brand attachment, and fan identification. Chapter 3 presents the research methodology, including the experimental design, measures, questionnaire structure, sampling, and data collection procedures. The operationalization of variables and statistical approach are also explained. Chapter 4 reports the empirical results, including manipulation checks, descriptive findings, and hypothesis testing. Mediation and moderation analyses are presented and interpreted. Chapter 5 discusses the results in light of previous literature, explains theoretical and managerial implications, and highlights how self-enhancing humor may serve as a low-cost communication strategy for football clubs. Finally, the chapter addresses limitations and provides suggestions for future research.

2. Theoretical Discussion

2.1 Humor Styles and Typologies

Humor is a multifaceted construct that can refer to a stimulus intended to elicit laughter, a psychological response of amusement, the act of producing something funny, or a stable individual tendency to appreciate or create comedy (Warren et al., 2018). Humor can be understood along two dimensions: a horizontal axis that distinguishes different humor types, and a vertical axis that captures subgroups or variations within these categories. A widely used framework is Martin et al.'s (2003) four-style typology, which differentiates affiliative, aggressive, self-enhancing, and self-defeating humor. Affiliative humor aims at strengthening social bonds and improving group well-being (positive humor), whereas aggressive humor focuses on elevating oneself at the expense of others (negative humor). Self-enhancing humor is directed toward personal improvement without harming others (positive humor), while self-defeating humor (or often described as self-disparaging) relies on putting oneself down to gain social acceptance (Martin et al., 2003; Warren et al., 2018). This typology is particularly relevant to the present study because it distinguishes between uplifting (positive) and disparaging (negative) humor. In the context of sport brands, affiliative humor can foster stronger fan connections, while aggressive humor may backfire and intensify negative perceptions after defeats. Mathieu et al. (2024) show that the effectiveness of humor depends on brand positioning. For underdog brands, affiliative humor is most effective as it conveys friendliness and relatability, fostering stronger connections with consumers. In contrast, top-dog brands benefit more from aggressive humor, as it is perceived as a benign violation that generates amusement rather than hostility. Applied to sports, this suggests that smaller clubs may strengthen fan attachment through affiliative humor, whereas dominant clubs like Bayern Munich can employ more aggressive humor without risking backlash. Thus, understanding the balance between uplifting and disparaging humor provides a foundation for identifying which humor forms are most effective for brands in sensitive situations.

Apart from categorizing humor styles, research also highlights the role of individual traits in shaping humor effects. For instance, Need for Cognition (NFC) moderates the persuasiveness of humorous messages: individuals low in NFC, who rely on peripheral cues, are more strongly influenced by humor compared to non-humorous ads, whereas individuals high in NFC are less affected by humor and focus more on argument strength (Zhang, 1996). Beyond these individual traits, humor can also reduce counterarguments by distracting from negative ad-

related cognitions (Eisend, 2011). Relatedly, in the context of online advertising, humor has been found to lower perceptions of intrusiveness, which are typically linked to irritation and unfavourable brand attitudes, thereby fostering more favourable consumer responses (Goodrich et al., 2015).

Self-defeating and self-deprecating humor are often used interchangeably in the literature. While some research situates self-deprecating humor on the negative side, framing it as talking oneself down and potentially emphasizing one's own faults (Greengross & Miller, 2008; Levine & Shin, 2025), others describe it in a more positive light, portraying it as a light-hearted way of making oneself approachable (Kobel & Groeppel-Klein, 2021). What unites these perspectives is the recognition that self-deprecating humor always involves humor made at one's own expense, where the expresser and the target are the same (Bitterly et al., 2016; Lee et al., 2015).

The debate around the positioning of self-deprecating humor on the positive-negative spectrum also extends to its effects. Kobel & Groeppel-Klein (2021) emphasize its potential to release tension and increase leniency, leading to more favourable attitudes, whereas Levine & Shin (2025) argue that it can create psychological discomfort and negative evaluations. Similarly, Greengross & Miller (2008) found that self-deprecating humor was associated with lower levels of conscientiousness, extraversion, agreeableness, and emotional stability, traits generally considered unattractive. At the same time, contextual factors such as gender, status, perceived playfulness, and whether the joke is actually found funny shape the outcomes of self-deprecating humor (Bitterly et al., 2016; Greengross & Miller, 2008; Kobel & Groeppel-Klein, 2021; Levine & Shin, 2025; Martin et al., 2004). It is also worth noting that prior research has examined self-deprecating humor primarily in interpersonal relationships (Greengross, 2008) or service failure contexts (Kobel & Groeppel-Klein, 2021; Levine & Shin, 2025). Translating this into the present study, losing a football match can be conceptualized as a form of service failure. While it differs from not receiving a purchased product or experiencing poor treatment in a restaurant, supporting a team through memberships, season tickets, or merchandise represents a form of extended service relationship. Accordingly, prior research does not provide a consistent indication of whether self-deprecating humor exerts predominantly positive or negative effects, underscoring the absence of a clear directional pattern relative to other humor types.

Beyond the specific case of self-deprecating humor, research also highlights that humor itself conveys important social signals. The attempt at humor, regardless of success, communicates confidence on the part of the joke teller. Successful humor further enhances perceptions of competence and status, while failed humor undermines them. This underscores the inherently risky nature of humor, where effectiveness depends not only on execution but also on the social response it elicits. Laughter functions as a critical indicator of success, reflecting audience approval and shaping the outcomes for the expressor (Bitterly et al., 2016). However, these findings have so far been examined primarily at the individual level rather than in group contexts.

A comprehensive understanding of humor effects requires not only classifying humor styles but also explaining the underlying mechanisms that determine when humorous messages are perceived as acceptable or offensive. McGraw & Warren (2010) introduced the benign violation theory, which argues that humor emerges when norm violations are perceived as benign rather than threatening. In this framework, “benign” means “acceptable,” and a violation is judged as such if at least one of three conditions applies: (a) a salient norm suggests that something is wrong while another suggests it is acceptable, (b) the individual is only weakly committed to the violated norm, or (c) the violation is psychologically distant (McGraw & Warren, 2010, p.1142). When applied to marketing, this framework clarifies why some humorous brand messages are received as uplifting (positive) while others are dismissed as disparaging (negative) (Warren et al., 2018).

Building on this perspective, more recent research has demonstrated that not all humor appeals influence brand perceptions in the same way. Hoang et al. (2023) examine four humor appeals, namely incongruity resolution, tension relief, self-disparagement, and other-disparagement which are comparable to the humor styles proposed by Martin et al. (2003). Their findings show that an incongruity resolution humor appeal enhances consumers’ perceptions of a firm’s competence, provided that the incongruity can be successfully resolved by the consumer itself. A tension relief humor appeal, in contrast, enhances perceptions of warmth. Self-disparagement humor tends to reduce perceptions of competence, while other-disparagement humor reduces both warmth and competence. These findings indicate that the strategic use of humor in advertising can strengthen perceived competence, provided that audiences resolve the incongruity. If the incongruity resolution fails, consumers may form negative impressions of the brand (Hoang et al., 2023). In a sport context, this implies that humorous social media posts

must clearly convey the resolution of the joke to ensure the intended relief effect, as clarity or resolution is especially critical after defeats, when fans tend to be particularly sensitive.

Extending this discussion, teasing represents a specific humor subtype that can operate on a spectrum from prosocial to antisocial (Oba et al., 2025). Prosocial teasing conveys playfulness and affiliation, evoking positive human schemas and strengthening the self-brand connection. Antisocial teasing, in contrast, is perceived as hostile, activates negative schemas, and undermines brand relationships. Both forms increase perceptions of anthropomorphism, yet only prosocial teasing translates into stronger brand bonds (Oba et al., 2025). For sport brands, this distinction is crucial: while playful teasing may help fans cope with losses and maintain attachment, antisocial teasing may intensify negative fan reactions and erode trust in the brand.

Therefore, humor can elicit very different emotional responses depending on its underlying style. While adaptive forms of humor (e.g., self-enhancing or affiliative) tend to uplift, or reassure the receiver, more disparaging or aggressive forms can provoke discomfort, tension, or social threat. Because each humor style conveys specific social signals such as warmth, insecurity, confidence, or ridicule, humor styles shape how the receiver interprets the message and, ultimately, how they evaluate the communicator. In a sport club context, these signals influence whether fans feel understood, respected, or emotionally supported by the club. Consequently, different humor styles can facilitate or hinder emotion regulation processes such as reappraisal, buffering, or de-escalation of negative affect (Samson & Gross, 2012; Wu et al., 2021; Yao et al., 2022). This makes emotion regulation a crucial underlying mechanism for understanding how humor may indirectly shape fans' well-being and, in turn, their attachment to the brand.

2.2 Emotion Regulation as a Mediator

Humor can promote positive emotion regulation, particularly in negative situations (Da Costa Dutra et al., 2023; Kugler & Kuhbandner, 2015; Samson & Gross, 2012; Wu et al., 2021). There are three main pathways through which humor can influence the emotion regulation process. First, humor can serve as a distraction, directing attention toward humorous aspects of a situation and thereby reducing focus on the negative event itself. Second, humor can undo negative emotions, as the positive affect that arises from amusement counteracts previously experienced negative feelings. Third, humor can facilitate cognitive reappraisal, allowing individuals to reinterpret a negative event in a less threatening or more manageable way. Within

the broader emotion regulation framework, humor can be conceptualized as a distinctive subtype of cognitive reappraisal that achieves reinterpretation through amusement and incongruity, thereby combining cognitive reframing with the generation of positive affect (Samson & Gross, 2012; Wu et al., 2021; Yao et al., 2022). Empirical and neurocognitive evidence support these processes as positive humor not only down-regulates negative emotions but also up-regulates positive emotions when individuals are exposed to negative stimuli (Samson & Gross, 2012), and neural activations associated with humor parallel those found in cognitive reappraisal (Wu et al., 2021). Building on this, Kugler & Kuhbandner (2015) demonstrated that humor's regulatory effect is primarily driven by cognitive reappraisal. In their study, memory for negative stimuli remained intact, indicating continued attention to the emotional material, while free recall declined, suggesting a shift toward item-specific rather than relational encoding. This pattern implies that humor alters how negative information is processed and stored, reframing rather than avoiding it.

Beyond behavioral evidence, neuroimaging findings provide further support for humor's role as a reappraisal-based emotion regulation strategy. Wu et al. (2021) found that humorous coping activates brain regions typically involved in cognitive reappraisal, including the hippocampus and prefrontal cortex, which facilitate cognitive restructuring of negative experiences. Additionally, activation in the amygdala and cerebellum indicates affective modulation, reflecting the emotional release associated with amusement. Together, these findings suggest that humor operates through a dual mechanism, combining cognitive reframing with positive affective activation. This dual process aligns with the view of humor as a particularly effective emotion regulation strategy for mitigating negative experiences and fostering psychological recovery.

Additional evidence highlights that humor facilitates emotion regulation by fostering psychological distancing, a key mechanism of cognitive reappraisal. Braniecka et al. (2019) examined this process in a clinical sample of remitted depressed patients and found that humorous reappraisal enabled participants to adopt a more detached, observer-like stance toward negative experiences, thereby reducing emotional intensity. This distancing effect mediated decreases in negative affect and increases in positive emotion, illustrating that humor changes how individuals relate to adversity rather than suppressing it (Braniecka et al., 2019). Although this study focused on individuals with a vulnerability to negative mood, the underlying mechanism of cognitive distancing is not disorder specific. It reflects a general

psychological process that allows people to gain perspective and emotional control in response to adverse events. In the context of this thesis, fans experiencing a team's defeat may similarly benefit from humorous reappraisal, as it enables them to distance themselves from the setback, reduce negative affect, and maintain a positive connection with the team.

Building on this, research consistently shows that not all forms of humor contribute equally to emotion regulation. Fu et al. (2024) differentiated between self-enhancing and self-defeating humor, finding that self-enhancing humor was the most effective in regulating emotions compared to both self-defeating humor and general cognitive reappraisal. While self-defeating humor also serves a regulatory function, it tends to be less adaptive because it can foster self-negation and reduced self-worth (Fu et al., 2024). In contrast, self-enhancing humor enables individuals to reframe negative experiences in ways that reinforce self-esteem and maintain a positive sense of identity, thereby supporting psychological resilience. Amjad & Dasti (2022) extended these findings by showing that adaptive humor styles, comprising self-enhancing and affiliative humor, promote emotion regulation and overall well-being, whereas maladaptive styles such as self-defeating and aggressive humor are linked to emotion dysregulation and lower well-being (Amjad & Dasti, 2022). Together, these studies indicate that humor's emotion-regulating effect depends on its underlying orientation meaning that adaptive humor styles facilitate constructive reappraisal and positive affect, while maladaptive humor provide less effective or even counterproductive forms of regulation.

The effectiveness of humor as an emotion regulation strategy lies in its ability to elicit positive affect, rather than merely distract from negative stimuli (Harm et al., 2014; Kugler & Kuhbandner, 2015). This affective mechanism enables individuals to reinterpret negative experiences on an emotional level, thereby supporting cognitive reappraisal processes. Evidence for the stability of this mechanism comes from Harm et al. (2014), who found that both young and older adults benefited equally from humor following exposure to negative stimuli. These results indicate that humor's regulatory function remains effective across different age groups and operates through the generation of positive affect rather than simple attentional diversion.

Although cognitive and emotional approaches emphasize different aspects of humor-based regulation, they converge on the same principle. Humor facilitates reappraisal through psychological distancing, enabling individuals to reinterpret negative events in a less

threatening manner. Whether manifested in altered memory encoding (Kugler & Kuhbandner, 2015) or perceived psychological detachment (Braniecka et al., 2019) both processes highlight humor's unique capacity to transform how negative experiences are cognitively and emotionally represented.

2.3 Brand Attachment as an outcome

Before moving forward, it is important to distinguish between several key terms that are often used interchangeably in everyday language, namely brand attachment, brand attitudes, and self-brand connections (SBCs). Brand attitudes capture an individual's evaluative perception of a brand's goodness or badness (Park et al., 2010). Brand attachment, by contrast, is inherently positive and reflects the "strength of the bond connecting the brand with the self" (Park et al., 2010, p. 5). Park et al. (2010) conceptualize brand attachment as consisting of two dimensions, namely brand-self connection (the cognitive and emotional fit between the brand and the self) and brand prominence (the salience and ease with which brand-related associations come to mind). In the literature, brand-self connection and self-brand connection are often used interchangeably so for clarity, the present thesis will consistently use the abbreviation SBC. However, later work suggests that brand attachment may extend beyond this two-dimensional view. For instance, while brand attitudes can develop without direct interaction with the brand, brand attachments require time and deeper experiences to form. Importantly, favourable attitudes do not automatically translate into loyalty or commitment: paying a price premium or resisting attractive alternatives is characteristic of brand attachment but unusual for attitudes alone (Thomson et al., 2005). Building on this reasoning, Thomson et al. (2005) expand Park's model by framing attachment as a higher-order construct consisting of affection, passion, and connection, thereby underlining the emotional depth that distinguishes attachment from mere attitudes. In a sports context, this translates into resistance not only to changes in the team's performance but also to alternative choices, such as switching allegiance to another club. Attachment thus goes beyond mere support; it reflects the integration of the team into the fan's identity, making them feel part of the team itself (Funk & James, 2001).

One way to strengthen SBC is through narrative processing in advertising. Narratives map brand stories onto autobiographical memories, thereby reinforcing SBC (Escalas, 2004). This mechanism not only contributes to identity construction but also serves as a means of self-presentation, enabling consumers to signal differentiation or belonging. Empirical evidence

shows that stronger SBCs improve brand attitudes and increase the likelihood of purchase as well as loyalty during adverse circumstances (Escalas, 2004; Malär et al., 2011).

Extending this beyond narratives, Oba et al. (2025) demonstrate that prosocial teasing in brand communication strengthens SBC by activating positive human schemas (e.g., playfulness, confidence). This suggests that humor is not merely a tool for attention or entertainment but can serve as a mechanism for deepening consumer-brand bonds, which is especially relevant in sport contexts where emotional attachment is central (Oba et al., 2025). While the study considered brand personality, their focus was restricted and did not account for the broader variety of personalities that brands can embody. Sport brands, and football clubs in particular, represent such a special case as they are not only perceived through their “brand personality” but also serve as symbols of community, tradition, and identity. This explains why attachment to football clubs often translates into concrete, large-scale commitment. For example, FC Bayern Munich counts over 410,000 registered members (Kicker, 2025), underscoring the immense capacity of sport brands to foster enduring and widespread consumer-brand bonds.

Beyond communication strategies and brand personality considerations, another crucial driver of brand attachment lies in the degree of self-congruence between the consumer and the brand. While Escalas (2004) emphasizes that narrative advertising can enhance self-brand connection by linking brand stories to personal memories, Malär et al. (2011) demonstrate that actual self-congruence (when the brand reflects who the consumer currently is) creates stronger emotional brand attachment than ideal self-congruence, which reflects aspirations. This effect arises because actual self-congruence fosters authenticity and trustworthiness, fulfilling the consumer’s need for self-verification. Although Malär’s findings are based on consumer goods brands, the mechanism is equally plausible in sports contexts, where attachment emerges not only from aspirational ideals but also from the extent to which a club reflects fans’ real identity through community, heritage, values, or regional pride.

Therefore, the interest lies in understanding the underlying process through which humor influences brand attachment. While humor may activate positive human schemas directly, it may also exert its influence indirectly through the regulation of negative emotions following a defeat. Since clubs aim to keep fans attached to the brand, clarifying whether this attachment is shaped by humor itself or by the emotion-regulation process it triggers is essential for developing more effective communication strategies.

2.4 Fan Identification as a Moderator

Fan identification varies substantially across individuals, and these varying levels may influence how strongly fans' emotional and attitudinal responses are shaped by humorous defeat-related posts. Following Lock & Heere (2017), team and fan identification represent distinct but related concepts. While team identification reflects a group-based social identity, fan identification captures the personal role of being a fan as part of one's self-concept (Lock & Heere, 2017). As such, the present study conceptualizes fan identification as an individual-level construct that may moderate fans' emotional and attitudinal responses to humorous defeat-related posts. Nevertheless, the mechanisms proposed in Social Identity Theory (Turner et al., 1979) remain relevant, as they help explain how affiliation with a valued group can shape individual perceptions and emotional responses.

Fans can be distinguished from spectators in that fans share a psychological connection with a team or club, whereas spectators merely attend or observe a sporting event without necessarily forming such a bond. Although fans may also be spectators, spectators are not necessarily fans. Fan identification therefore refers to the degree of psychological connection and sense of attachment an individual feels toward a team or club (Dietz-Uhler & Lanter, 2008; Dimmock & Grove, 2005; Stevens & Rosenberger, 2012). This conceptualization aligns with broader research on fan identity across domains, showing that identification involves emotional, cognitive, and behavioral components that contribute to social connectedness and well-being (Phua, 2010; Vinney et al., 2019). The effects of strong fan identification can be divided into affective, cognitive, and behavioral consequences. Affective consequences generally include heightened emotional responses that vary depending on whether the team wins or loses. Specifically, victories tend to elicit emotions such as enjoyment, happiness, and satisfaction, whereas defeats evoke anger, anxiety, and depression. The level of fan identification also shapes these emotional patterns, as highly identified fans are more likely to experience anger following a loss, while low-identified fans tend to respond with sadness (Crisp et al., 2007).

In terms of cognitive effects, highly identified fans typically possess greater team knowledge and exhibit stronger in-group biases toward fellow supporters and against rival fans. This bias also influences how fans interpret their team's performance, with highly identified fans more likely to perceive their team's actions and outcomes in a favorable light (Crisp et al., 2007; Phua, 2010). This can be explained through Social Identity Theory (Turner et al., 1979) which

suggests that individuals try to maintain a positive view of their group by favoring their in-group and protecting it from negative evaluations.

Media use also plays an important role in maintaining and strengthening fan identification. In particular, online media enable fans to preserve a positive social identity by receiving and exchanging information about their team, which in turn supports self-esteem and feelings of belonging (Phua, 2010). From this perspective, media engagement can be seen as both a cognitive and behavioral outcome of fan identification, as it reinforces favorable evaluations of the team and provides opportunities for active participation in the fan community. However, the study by Phua (2010) was geographically limited to American college football fans and did not differentiate between wins and losses. It is therefore possible that media usage and purpose vary depending on whether a fan's team is winning or losing. Empirical evidence supports this relationship, as higher fan involvement has been shown to increase media-based information seeking, which in turn strengthens fan identification and ultimately drives loyalty (Stevens & Rosenberger, 2012).

Regarding behavioral consequences, highly identified fans demonstrate stronger loyalty to their team (Crisp et al., 2007), but may also display aggressive behaviors following defeats (Wann et al., 2005) or experience negative emotions such as "Schadenfreude" toward rival teams when the importance of winning is high (Dalakas & Phillips Melancon, 2012). However, Dimmock & Grove (2005) found no significant increase in aggressive behavior among highly identified fans compared to those with moderate or low identification, but these fans reported feeling less control over their aggressive impulses. This duality illustrates that intense identification can both reinforce commitment and amplify negative emotional reactions when group identity is threatened.

Beyond its emotional and social implications, fan identification also has tangible consumer consequences. Empirical evidence shows that highly identified fans display stronger purchase intentions toward team sponsors' products, even when both the sponsor and the team are foreign (Wang et al., 2012; Gwinner & Swanson, 2003). This relationship is partly explained by the fans' perception of sponsor credibility and their positive attitude toward the sponsor, suggesting that identification can translate into favorable brand evaluations and purchase behavior. Similarly, Hickman (2015) found that highly identified fans are more likely to allocate a greater share of spending toward sponsor brands, particularly when sponsor awareness is high.

These insights suggest that highly identified fans, due to their stronger loyalty and deeper psychological connection to the team, may experience a greater need for emotion regulation following a defeat. Because a loss poses a stronger threat to their social identity, the regulation process may play a more central role for them. In this context, humor could help mitigate this intensified negative state and restore emotional equilibrium.

2.5 Conceptual Model

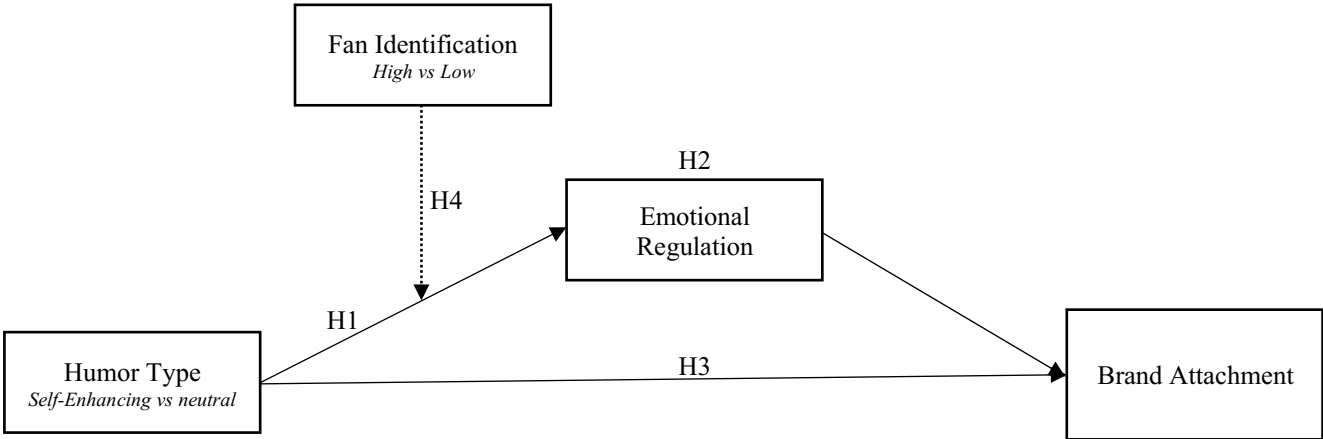


Figure 1: Conceptual Model including the Hypotheses

H1: (Direct Effect)

Self-enhancing humor (vs. neutral) in Instagram posts by sport brands positively influences fans’ emotion regulation after a defeat.

H2: (Mediation)

Emotional regulation mediates the relationship between humor type (self-enhancing vs. neutral) and brand attachment.

H3: (Direct Effect on Brand Attachment)

Self-enhancing (vs. neutral) in Instagram posts positively influences fans’ brand attachment.

H4: (Moderation)

The positive effect of humor type (self-enhancing vs. neutral) on emotion regulation is stronger for highly identified fans than for lowly identified fans.

Considering the hypotheses, the previous conceptual model was developed. The model proposes that humor type (self-enhancing vs. neutral) influences emotion regulation, which in turn affects brand attachment (Fu et al., 2024; Warren et al., 2018). Thus, emotion regulation is expected to mediate this relationship (H1-H3). In addition, fan identification is expected to moderate the effect of humor type on emotion regulation, such that highly identified fans show a stronger positive response to self-enhancing humor than low-identified fans (H4) (Crisp et al., 2007; Phua, 2010; Vinney et al., 2019). This framework allows examination of both the psychological mechanisms (mediation) and boundary conditions (moderation) through which humorous communication after a defeat affects fans' emotional responses and attachment as an outcome.

3. Methodology

The present study employed a quantitative experimental research design to investigate how football teams' use of humor following a defeat influences fan outcomes. Specifically, the study examines whether exposure to a self-enhancing humorous Instagram post, compared to a neutral post, facilitates emotion regulation, which in turn is expected to strengthen brand attachment. In addition, the study considers fan identification as a potential moderator, assuming that individual differences in psychological connection to the team may influence these effects.

To address the research question, participants were randomly assigned to one of two experimental conditions and completed an online survey administered through Qualtrics (for full Survey and Survey Flow see [Appendix 1](#)). This chapter describes the methodological framework of the study. First, the research design is presented, followed by participant recruitment, screening, and sample characteristics. Next, the research procedure is outlined, including stimulus presentation, random assignment, and the manipulation check. Finally, the measurement instruments are described.

3.1 Recruitment and Screening

Participants were recruited via Prolific using a screening procedure targeting individuals with an active interest in football and regular Instagram use. Initial eligibility was indicated at the platform level, where only users who self-identified as football followers and Instagram users were invited to participate. A second screening stage was implemented at the start of the Qualtrics survey. Participants responded to three items evaluating: (1) their interest in following professional football (1 = *not at all* to 7 = *very closely*), (2) Instagram usage frequency (1 = *never* to 7 = *multiple times per day*), and (3) whether they have a favorite football club (1 = *no*; 3 = *yes*). Participants scoring ≤ 3 on items 1 and 2, or < 3 on item 3, were screened out and did not continue. A short message informed screened-out individuals that they would not proceed further due to eligibility criteria. This two-step approach ensured that only football-interested Instagram users with a favorite club advanced to the experiment.

3.2 Sample Size

Data were collected on Prolific. In total, 231 submissions were approved on the platform, 2 were rejected for completing the survey unrealistically fast, and 27 were returned by participants before completion. Within the approved set, 8 participants failed the in-survey screening questions (see Screening Procedure above), yielding a final analytic sample of $N = 223$. An a priori power analysis using GPower 3.1 (Kang, 2021) indicated that a total sample of approximately 200 participants was required to detect a medium effect size (Cohen's $d = 0.40$) with 80% power at $\alpha = .05$ (two-tailed) for an independent-samples comparison. The final sample of 223 participants therefore met the recommended power requirements.

3.3 Research Design

3.3.1 Scenario

To ensure a shared understanding of the match context, all participants were presented with a brief scenario prior to the stimulus exposure. The scenario read as follows:

“Please read the following scenario carefully.

Your favorite professional football club is currently ranked in the upper third of the league table. Only a few important matches remain this season, and every point is crucial to secure qualification for an international competition next year. In today's match, your club lost 2-0 against the team positioned at the very bottom of the league table.”

This scenario was implemented to standardize the perceived importance and emotional relevance of the defeat. A controlled narrative was necessary to ensure that all participants interpreted the loss similarly. Without such contextualization, the meaning of the defeat could have varied, e.g., losing 1-0 to the strongest team in the league may be perceived differently from losing 6-0 to the weakest. Therefore, the scenario provided a consistent and meaningful defeat situation across conditions.

3.3.2 Design

The questionnaire took approximately six minutes to complete, with Prolific reporting a median completion time of 6.25 minutes. It consisted of three screening questions, followed (if passed) by 15 additional questions.

The study employed a 2-level between-subjects experimental design, in which participants were randomly assigned to view either a self-enhancing humorous Instagram post or a neutral

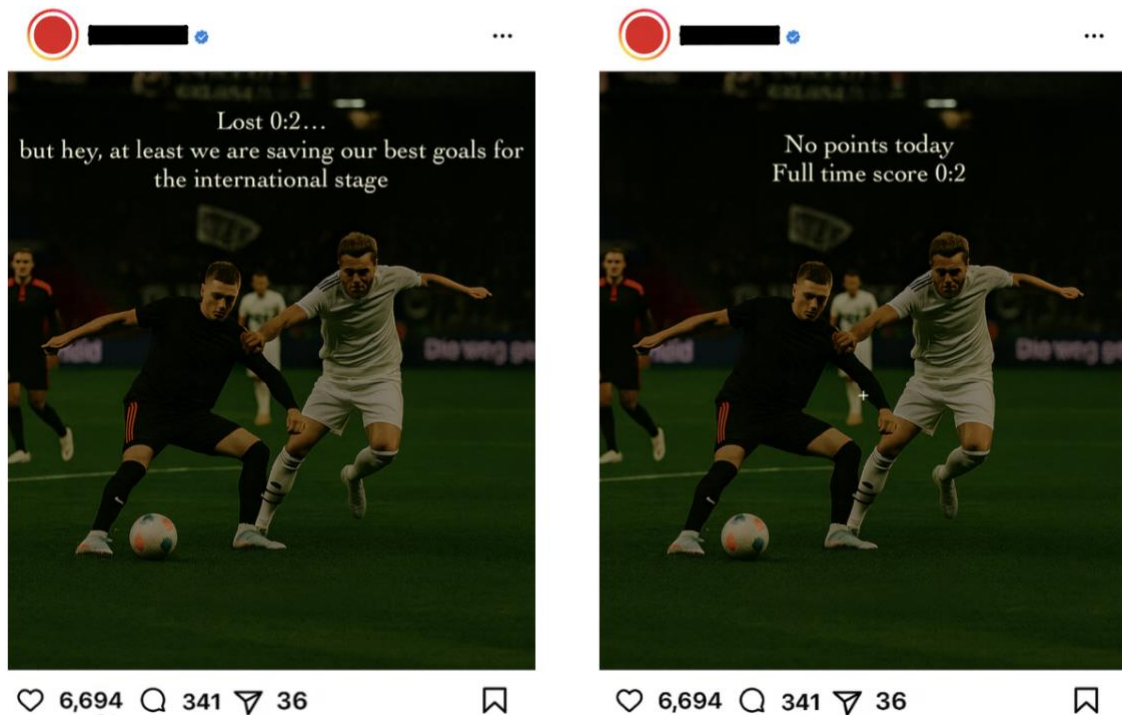


Figure 2: Experimental material: The post on the left is the self-enhancing humor post, the post on the right is the neutral post

Instagram post, both referencing the same football team’s defeat. In the humorous condition, the defeat was reframed using self-enhancing humor, whereas in the neutral condition, the loss was presented factually without humorous elements (see below).

To ensure the effectiveness of the manipulation, participants completed a humor manipulation check immediately after the Instagram post. Perceived humor was measured with three items adapted from prior work (Eisend, 2022; Warren et al., 2018) e.g., “*The post was funny,*” “*The post was humorous,*” “*The post was amusing*”, on a 7-point scale (1 = *strongly disagree*, 7 = *strongly agree*), with higher scores indicating greater perceived humor. The three-item perceived-humor scale demonstrated high internal consistency (Cronbach’s $\alpha = .89$). An attention-check item was embedded mid-survey (e.g., “*Please select the number 4 for this statement.*”); all participants passed, so no exclusions were made on this basis. Across the survey, participants provided pre- and post-stimulus affect ratings (for emotion regulation), and completed measures of brand attachment and fan identification, plus demographics. All questions used forced responses in Qualtrics. Experimental cell sizes were self-enhancing humor ($n = 112$) and neutral post ($n = 111$).

3.5 Measures

3.5.1 Control Variables

To account for alternative explanations and isolate the effects of the experimental manipulation, several control variables were included.

First, Instagram football-related exposure was measured to control for participants' typical level of contact with football content online. Participants indicated how often they viewed football-related posts on Instagram on a 7-point scale (1 = *Never*; 7 = *Multiple times per day*).

Second, participants were asked to report the league in which their favorite football club competes. This variable was included to control for differences in club prominence or competitive level, which may systematically influence fan responses.

Finally, two indicators of financial and organizational involvement were assessed: (1) whether participants spend money on club merchandise, and (2) whether they are registered members of their favorite club. These measures capture behavioral expressions of commitment that could strengthen emotional reactions independently of the experimental manipulation

3.5.2 Emotion Regulation (Mediator)

To quantify emotion regulation, affective responses were measured following the procedure outlined in (Fu et al., 2024) using the Positive and Negative Affect Schedule (PANAS 1.0) (Crawford & Henry, 2004). Emotion regulation was operationalized as the change in affect before and after exposure to the Instagram post. Participants first reported their emotions immediately after reading the defeat scenario (pre-test) and again after viewing the Instagram stimulus (post-test). Two affective dimensions were assessed: 1. Positive affect: *interested, relieved, hopeful* and 2. Negative affect: *disappointed, frustrated, upset*. Participants indicated the extent to which they experienced each emotion "*right now*" on a 7-point Likert scale (1 = *not at all*, 7 = *very strongly*). To reduce response-order bias, the presentation order of all emotion regulation items was randomized.

Internal consistency was examined separately for each affect dimension at both measurement points. Reliability was acceptable for positive affect at pre-test ($\alpha = .72$) and good at post-test ($\alpha = .81$). Negative affect demonstrated good to excellent internal consistency, with $\alpha = .89$ at pre-test and $\alpha = .93$ at post-test.

3.5.3 Brand Attachment (Dependent Variable)

Brand attachment was assessed using the Emotional Attachment Scale developed by Thomson et al. (2005). This scale captures the strength of consumers' emotional connection with a brand across three components: (1) Affection (e.g., "*I feel emotionally connected to this team*"), (2) Passion (e.g., "*I feel enthusiastic about this team*"), and (3) Connection (e.g., "*This team is part of me*").

To additionally capture state-like, momentary perceptions following the experimental manipulation, participants responded to two complementary items emphasizing immediate evaluative reactions toward their favorite club (e.g., "*Right now, I like this team,*" "*At this moment, I trust this team,*").

All items were rated on a 7-point Likert scale (1 = *strongly disagree*, 7 = *strongly agree*), with higher scores indicating stronger attachment. To reduce response-order bias, the presentation order of all brand-attachment items was randomized. The five brand-attachment items demonstrated high internal consistency (Cronbach's $\alpha = .89$).

3.5.4 Fan Identification (Moderator)

Fan identification was assessed using a multi-component measurement strategy capturing cognitive, emotional, and behavioral aspects of fandom. First, participants reported their global level of identification with their favorite football club using a single-item measure ("*Overall, how strongly do you identify as a fan of your favorite football club?*"), rated on a 7-point Likert scale (1 = *not at all a fan*, 7 = *extremely strongly*).

Second, emotional identification was measured using the 6-item adaptation of Mael & Ashforth (1992) organizational identification scale for sport (Gwinner & Swanson, 2003). This scale assesses the extent to which participants internalize the club's successes, failures, and public perception (e.g., "*When someone criticizes my favorite football club, it feels like a personal insult.*"; "*My favorite football club's successes are my successes.*"). Items were rated on a 7-point Likert scale (1 = *strongly disagree*, 7 = *strongly agree*). To reduce response-order bias, the presentation order of all emotional fan identification items was randomized. The six-item emotional fan identification subscale showed high internal consistency (Cronbach's $\alpha = .87$).

Third, Behavioral Fan Identification was assessed using two items that captured participants' observable engagement with their favorite football club. The first item measured stadium attendance frequency, asking participants "*How often do you attend your favorite club's matches in the stadium?*" (1 = *never*, 7 = *every home match*). The second item measured live match viewership, asking "*How often do you watch your favorite club's matches live via TV, streaming, or in the stadium?*" (1 = *never*, 7 = *every match*). Higher scores on both items indicate stronger behavioral engagement with the club.

3.6 Demographics

Demographic information was kept intentionally minimal to reduce survey length and participant burden. Participants reported their age group (7 categories ranging from *under 18* to *65+ years old*) and gender ("*male*," "*female*," "*non-binary/third gender*", or "*prefer not to say*"). No additional demographic variables were collected, as they were not central to the research question.

3.7 Procedure

Participants first provided informed consent, which was required both on the Prolific platform and again at the beginning of the online survey to ensure full ethical compliance. After confirming consent and passing the screening questions, participants were automatically directed to the experimental survey. They were randomly assigned to one of two conditions (self-enhancing humorous vs. neutral Instagram post) and then completed all study measures, including items assessing emotion regulation, brand attachment, and fan identification, followed by demographic questions.

Upon completion, participants received a unique completion code that redirected them back to Prolific. Each submission was reviewed for data quality before approval, and compensation was subsequently issued. Participation was entirely anonymous, and participants were informed that their responses would be treated confidentially and used solely for research purposes.

4. Data Analysis

This chapter presents the data analysis conducted to address the research questions and test the proposed hypotheses. Prior to analysis, data cleaning was performed by removing responses that were flagged or screened out. All statistical analyses were carried out using IBM SPSS Statistics (Version 30).

4.1 Descriptive Analysis

4.1.1 Demographics

Nearly half of the participants were between 25 and 34 years old (49.8%), followed by 18-24-year-olds (22.9%) and 35-44-year-olds (17.9%). Smaller proportions of participants were between 45 and 54 years old (6.7%), 55 and 64 years old (1.8%), or 65 years and older (0.9%).

Regarding gender, approximately half of participants identified as female (52.5%) and 47.1% as male, while 0.4% identified as non-binary or a third gender.

4.1.2 Sample Background Characteristics

Participants reported seeing Instagram posts from their favorite football clubs relatively frequently ($M = 5.49$, $SD = 1.35$, range = 1-7). Most participants supported clubs competing in the Premier League (63.7%), followed by La Liga (18.4%) and the Primeira Liga (6.3%). Smaller proportions supported teams in the Bundesliga (3.6%), Ligue 1 (2.2%), Serie A (2.2%), the Liga Profesional de Fútbol (1.8%), the Eredivisie (0.9%), the Turkish Süper Lig (0.4%), and the Campeonato Brasileiro Série A (0.4%).

A large majority of participants reported spending money on official merchandise from their favorite club (81.2%), while 18.8% indicated that they do not. Regarding club membership, about 39.9% of participants reported being official members of their favorite football club, whereas 60.1% were not.

Participants reported a strong subjective sense of identification with their favorite football club (on a 1-7 scale), with 75% of participants rating their fan identification at 6 or higher. In regards of behavioral fan identification, about 50% reported rarely or only occasionally attending matches in person, while around 25% attended frequently. In contrast, approximately 75%

stated that they often or very often watched their club's matches live on television or via streaming.

4.1.3 Main Study Variables

Emotion Regulation

Emotion regulation was operationalized as the change in self-reported affect from before to after exposure to the humorous Instagram post. Positive affect change was computed as post-test minus pre-test ratings, whereas negative affect change was computed as pre-test minus post-test ratings (Fu et al., 2024). Participants showed a small increase in positive affect ($M = 0.39$, $SD = 1.43$) and a decrease in negative affect ($M = 0.97$, $SD = 1.66$). A combined emotion-regulation index was computed as the mean of these two indicators ($M = 0.68$, $SD = 1.36$), with higher values indicating greater overall emotional improvement.

Brand Attachment

Participants reported relatively high levels of brand attachment toward their favorite football club ($M = 5.72$, $SD = 1.21$, range = 1-7).

Fan Identification

Fan identification was assessed through three indicators: subjective, emotional, and behavioral identification. Subjective identification reflected the extent to which participants personally identified with their favorite football club ($M = 6.04$, $SD = 1.05$, range = 3-7).

Emotional fan identification was assessed using a continuous scale ($M = 5.05$, $SD = 1.39$, range = 1-7), with higher scores indicating stronger emotional connection to one's favorite club. For moderation analyses, emotional fan identification was dichotomized using a median split ($Mdn = 5.33$), dividing participants into low (46.6%) and high (53.4%) identification groups. This means that although emotional identification was originally measured continuously, it was later categorized to examine whether the strength of identification moderated the psychological effects of humor.

Behavioral fan identification was measured by averaging how often participants attended matches in person and how often they watched live broadcasts. Scores ranged from 1 to 7, with higher values reflecting stronger behavioral engagement. The mean behavioral identification score was $M = 4.75$, $SD = 1.32$, suggesting moderate engagement overall.

Although subjective and behavioral fan identification were assessed to provide a broader understanding of participants' relationships with their clubs, only emotional fan identification was included in the moderation analysis (H4), as it most directly captures the psychological connection relevant to emotion regulation.

Descriptive statistics for all main study variables are presented in Table 1. Means, standard deviations, and ranges were calculated for each variable. Pearson correlations were computed to examine the relationships between all variables. Emotion regulation was positively correlated with brand attachment ($r = .21, p = .002$) and with emotional fan identification ($r = .14, p = .042$). Furthermore, brand attachment was strongly positively correlated with emotional fan identification ($r = .53, p < .001$).

Table 1: Descriptives & Correlations of Main Study Variables

Variable	M	SD	1	2	3
1. Emotion Regulation (Combined)	0.68	1.36	---	.208**	.136*
2. Brand Attachment	5.72	1.21	.208**	---	.534***
3. Emotional Fan Identification (Mean)	5.05	1.39	.136*	.534***	---

Note. M= mean; SD= standard deviation; r= Pearson correlation; * $p < .05$; ** $p < .01$; *** $p < .001$.

4.1.4 Humor Manipulation Check

A manipulation check confirmed that participants in the humor condition perceived the Instagram post as more humorous ($M = 3.68, SD = 1.73$) than those in the neutral condition ($M = 2.43, SD = 1.47$). An independent-samples t -test showed that this difference was statistically significant, $t(216.24) = 5.78, p < .001$, with a medium-to-large effect size ($d \approx 0.77-0.84$). These results indicate that the humor manipulation was successful ([Appendix 2](#)).

4.2 Hypotheses Testing

H1 (Direct Effect)

Self-enhancing humor (vs. neutral) in Instagram posts by sport brands positively influences fans' emotion regulation after a defeat.

An independent-samples *t*-test was conducted to examine whether the humorous post condition led to higher emotion regulation than the neutral post condition¹. Participants in the humor condition ($M = 1.01, SD = 1.43$) showed significantly greater emotion regulation than those in the neutral condition ($M = 0.34, SD = 1.21$), $t(215.24) = 3.74, p < .001$, Cohen's $d = 0.501$ (95% CI [0.234, 0.767]).

These findings indicate that exposure to self-enhancing humor significantly improved emotional regulation following a defeat compared to a neutral message, supporting H1 ([Appendix 3](#)).

H3 (Direct Effect on Brand Attachment)

Self-enhancing (vs. neutral) in Instagram posts positively influences fans' brand attachment.

An independent-samples *t*-test was conducted to examine whether exposure to self-enhancing humor led to higher brand attachment compared to a neutral condition. Levene's test indicated equal variances ($F = 1.55, p = .214$), so the standard *t*-test results were used.

Brand attachment did not differ significantly between the humor condition ($M = 5.80, SD = 1.17$) and the neutral condition ($M = 5.65, SD = 1.25$), $t(221) = 0.93, p = .352$, Cohen's $d = 0.125$, 95% CI [-0.138, 0.388]. These results indicate that exposure to self-enhancing humor did not significantly affect brand attachment, and thus H3 was not supported ([Appendix 4](#)).

H2 (Mediation)

Emotional regulation mediates the relationship between humor type (self-enhancing vs. neutral) and brand attachment.

A mediation analysis was conducted using PROCESS Model 4 (Hayes, 2022) with 5,000 bootstrap samples to test whether emotion regulation mediated the effect of humor condition on brand attachment. The humor condition significantly predicted emotion regulation ($b = -0.66, SE = 0.18, t(221) = -3.74, p < .001$), indicating that participants exposed to humorous posts reported higher emotion regulation than those exposed to neutral posts. Emotion regulation, in turn, significantly predicted brand attachment ($b = 0.18, SE = .06, t(220) = 3.02, p = .003$), suggesting that greater emotion regulation was associated with stronger brand attachment. The direct effect of humor condition on brand attachment was not significant ($b =$

¹ In cases where Levene's test was significant, unequal-variances statistics were reported.

-0.03, $SE = 0.16$, $t(220) = -0.19$, $p = .853$), whereas the indirect effect through emotion regulation was significant ($b = -0.12$, $BootSE = 0.05$, 95% CI [-0.24, -0.03]). Because the confidence interval did not include zero, the mediation was supported. These results indicate that exposure to self-enhancing humor indirectly increased brand attachment by enhancing emotion regulation, supporting H2 ([Appendix 5](#)).

H4 (Moderation)

The positive effect of humor type (self-enhancing vs. neutral) on emotion regulation is stronger for highly identified fans than for lowly identified fans.

A moderation analysis was conducted using PROCESS Model 1 (Hayes, 2022) with 5,000 bootstrap samples to test whether the effect of humor condition on emotion regulation was moderated by emotional fan identification. The interaction between humor condition and fan identification was not significant ($b = -0.07$, $SE = 0.13$, $t(219) = -0.57$, $p = .57$, 95% CI [-0.32, 0.18]). Humor condition significantly predicted emotion regulation ($b = -0.67$, $SE = 0.18$, $t(219) = -3.81$, $p < .001$), such that participants in the humor condition reported higher emotion regulation than those in the neutral condition. Fan identification alone did not significantly predict emotion regulation ($b = 0.25$, $SE = 0.20$, $t(219) = 1.22$, $p = .23$, 95% CI [-0.15, 0.65]). Because the interaction was not significant, simple slopes were not interpreted. These results indicate that the effect of humor condition on emotion regulation did not differ between highly and lowly identified fans. Therefore, H4 was not supported ([Appendix 6](#)).

5. Conclusion

The purpose of this thesis was to examine whether professional football clubs use of self-enhancing humor on Instagram following a defeat facilitates fans' emotion regulation, and in turn, strengthens their brand attachment, while considering the moderating role of fan identification. The goal of this chapter is to draw a conclusion on the results and point out limitations and areas of future research.

5.1 Discussion

The analyses showed that exposure to self-enhancing humor in post-defeat Instagram communication improved fans' emotion regulation compared to a neutral message. Although self-enhancing humor did not directly increase brand attachment, emotion regulation mediated a positive indirect effect between this humor type and brand attachment. Furthermore, fan identification did not moderate the effects of self-enhancing humor on emotion regulation or brand attachment, indicating that the benefits of humorous communication emerged similarly across different levels of identification.

Self-enhancing humor in Instagram posts improved fans' emotion regulation after a defeat. This finding aligns with prior literature showing that humor can positively predict emotion regulation, particularly in negative situations (Da Costa Dutra et al., 2023; Kugler & Kuhbandner, 2015; Samson & Gross, 2012; Wu et al., 2021). A plausible explanation is that self-enhancing humor helps individuals cognitively reframe negative experiences in ways that protect self-esteem and maintain a positive sense of identity, thereby fostering psychological resilience (Fu et al., 2024). In an emotionally charged context such as football, where defeats trigger strong affective responses, such cognitive reappraisal processes may be particularly likely to occur, making self-enhancing humor an effective regulatory strategy.

Self-enhancing humor did not have a direct effect on brand attachment. Although humor can activate positive human schemas such as playfulness and confidence which are features that can strengthen perceptions of brand personality (Oba et al., 2025), brand attachment is a considerably deeper construct. Attachment to a football club extends beyond momentary evaluations and reflects the incorporation of the club into a fan's identity, creating a sense of personal connection and belonging (Funk & James, 2001). Such identity-based bonds are typically stable and therefore less susceptible to situational cues like humor.

However, the analyses showed that emotion regulation mediated an indirect effect of self-enhancing humor on brand attachment. A plausible explanation is that following a defeat, fans experience a temporary misalignment between their emotional state and their usual level of attachment (Wu et al., 2021). When humorous communication supports the downregulation of negative emotions, it may help restore emotional equilibrium, allowing fans to reconnect with their underlying attachment to the club. In this sense, humor does not strengthen brand attachment directly but facilitates the emotional conditions under which baseline attachment can re-emerge.

Fan identification did not moderate the effect of self-enhancing humor on emotion regulation, indicating that highly and lowly identified fans reacted similarly to the humorous communication. Although highly identified fans typically show stronger behavioral engagement and greater knowledge about their team compared to lowly identified fans (Chih-Hung Wang et al., 2012; Crisp et al., 2007), the underlying process of emotion regulation appears to operate independently of such differences. When confronted with a negative event such as a defeat, self-enhancing humor may trigger cognitive reappraisal automatically, allowing individuals to downregulate negative affect regardless of their level of identification (Samson & Gross, 2012; Wu et al., 2021). In other words, both groups seem equally capable of engaging in the psychological coping process elicited by humor. Although there may be subtle differences in the extent of emotion regulation across identification levels, these differences were not substantial enough to produce a significant moderation effect in this study.

5.2 Implications

This study offers both theoretical and practical implications. Theoretically, it contributes to humor research within the underexplored context of professional football. The findings show that self-enhancing humor can function as an effective emotion-regulation strategy even in highly emotional situations such as a team's defeat, and that it can indirectly strengthen brand attachment through improved emotional coping. Moreover, while fan identification was included as a potential moderator, the findings indicate that its influence on emotion regulation was not significant, suggesting that the underlying regulatory process may operate similarly across different levels of identification.

Practically, the results provide valuable guidance for football clubs seeking to improve post-match communication. Because humorous content represents a simple and low-cost strategy, clubs may consider implementing self-enhancing humor after losses as a way to help fans cope with negative emotions. Although humor does not directly increase brand attachment, its indirect effect through emotion regulation suggests that it can support more stable and resilient fan-brand relationships over time.

5.3 Limitations and Future Research

This study has several limitations that offer opportunities for future research. First, brand attachment is a stable and deeply rooted construct that typically develops over time. Measuring it after a single exposure to humorous content may therefore underestimate potential effects. Future studies should consider a longitudinal design where fans are exposed to humorous posts repeatedly over a longer period, allowing researchers to assess whether humor contributes to changes in brand attachment over time.

Second, the study examined only one specific humor style (self-enhancing humor). While theoretically grounded, this restricts the generalizability of the findings. Other humor styles, such as self-defeating, affiliative, aggressive, or ironic humor, may influence emotion regulation or brand attachment differently. Future research should compare multiple humor types to identify which ones are most effective in negative performance contexts.

Third, the study used a generalized football scenario rather than examining fans of a particular club. Although this ensured comparability across participants, it may not fully capture the emotional nuances tied to specific teams. For example, fans of highly successful clubs may remain confident in future performance after a defeat, whereas fans of newly promoted teams might react more strongly. Future studies could therefore focus on specific clubs or compare clubs with similar histories, league positions, or fan cultures.

Another limitation concerns the artificial nature of the scenario used in this study. Asking participants to imagine a defeat cannot fully replicate the emotional intensity of an actual match outcome. Real fan engagement is shaped by contextual factors such as being surrounded by other supporters, the immediacy of the loss, and the timing at which post-match communication appears in a fan's feed. These situational elements can strongly influence emotional reactions and, consequently, the perceived negativity of a defeat. Future research should therefore

examine emotional responses in real-world settings, for example by measuring fan reactions directly after an actual match, to capture the full emotional dynamics that occur outside of a hypothetical context.

Finally, the research focused solely on football. While football is an emotionally intense sport, emotional culture varies significantly across leagues and sports. For example, American sports organizations (e.g., NBA, NFL, MLB) place a much stronger emphasis on entertainment, which may shape fans' reactions to humorous communication. Future research could explore these dynamics across different sports or cultural contexts to assess the generalizability of humor's effects.

5.4 Closing Summary

In sum, the findings show that self-enhancing humor effectively improves fans' emotion regulation following a defeat. While humor alone did not directly increase brand attachment, its positive effect on emotional coping indirectly strengthened fans' attachment to their club. Moreover, fan identification did not alter the impact of humor on emotion regulation, indicating that both highly and lowly identified fans benefit similarly from humorous communication. Overall, the study highlights emotion regulation as the central mechanism linking humorous post-defeat messaging to brand-related outcomes.

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Appendices

Appendix 1: Survey and Survey Flow in Qualtrics

Intro

Consent Form

Dear participant, This research study is part of a master's dissertation project at Católica Lisbon School of Business and Economics.

The purpose of this study is to better understand how football fans respond to different types of social media communication from their favorite clubs. The survey will take approximately 5 minutes to complete, and your participation is entirely voluntary.

You may withdraw from the study at any time and for any reason by simply closing your browser window. Please note that this study includes a few initial screening questions about football and Instagram use. If your answers do not match the criteria for participation, the survey will automatically end early. In that case, your responses will not be stored or analyzed. All responses are anonymous and confidential.

If you have any questions about this study, please contact: Can-Luca Dötsch (Master's Student, Católica Lisbon SBE) Email: s-cdotsch@ucp.pt

If you would like to take part, please click on the "-->" button below to give your consent and begin the experiment. Thank you very much for your participation!

Screening Questions

Q1_Follow Football

How closely do you follow professional football ?

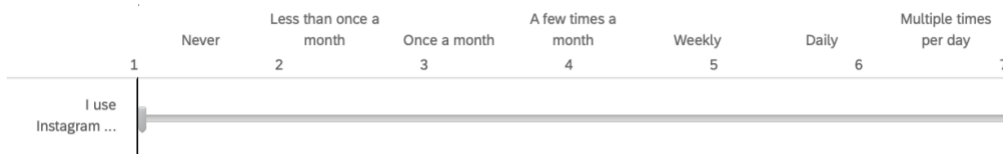
Note: The sliders start at position 1 by default. If you wish to select 1 as your answer, please move the slider and then return it to the far left position.



Page Break

Q2_Instagram Usage

How often do you use Instagram?



Page Break

Q3_Favorite Club

Would you say that you have a favorite football club?

- No, I do not have a favorite football club
- I am unsure/Not really
- Yes, I have a favorite football club

Screen-Out Message

Screen-out Message

Display this question

If How closely do you follow professional football ? Note: The sliders start at position 1 by default... I follow professional football ... Is Less Than 3

Or

If How often do you use Instagram? I use Instagram ... Is Less Than 3

Or

If Would you say that you have a favorite football club? I am unsure/Not really Is Selected

Or Would you say that you have a favorite football club? No, I do not have a favorite football club Is Selected

Thank you very much for your interest in participating! Based on your responses, this particular study may not be the best fit. We truly appreciate your time and willingness to take part.

Control Variables

Q4_FootballInstagram 🔍 *

How often do you see posts from your favorite football clubs on Instagram?

1 Never Less than once a month Once a month Weekly Several times a week Daily Multiple times per day 7

I see such posts ...

Page Break

Q5_Football League *

In which league does your favorite club play in?(Choose 1)

Premier League (England) ▾

Page Break

Q6_Football Merch. *

Do you spend money on official merchandising of your favorite club?

Yes I do

No I don't

Page Break

Q7_Member *

Are you an official member of your favorite football club?

Yes

No

Scenario

Scenario

Please read the following scenario carefully:

Your favorite professional football club is currently placed in the upper third of the league table. There are only a few important games left this season, and every point is crucial to secure qualification for an international competition next year. In today's match, your club lost 2:0 against the team at the very bottom of the table.

Baseline Affect

Q8_Baseline Emotions * ✕

Indicate the extent to which you feel this way right now:

1 = Not at all 7 = Very strongly

1 2 3 4 5 6 7

Interested

Relieved

Hopeful

Disappointed

Frustrated

Upset

Stimuli Humor

Stimuli Humor
You will now see an Instagram post from your club. Please view it carefully.

The image shows a soccer match scene with two players competing for the ball. The text overlay reads: "Lost 0:2... but hey, at least we are saving our best goals for the international stage".

6,694 341 36

Page Break

Stimuli Neutral

Stimuli Neutral
You will now see an Instagram post from your club. Please view it carefully.

The image shows the same soccer match scene as above. The text overlay reads: "No points today Full time score 0:2".

6,694 341 36

Humor Manipulation Check

Q9_Humor Check ★ ✕

Please rate the following statements:

1= Strongly disagree 7= strongly agree

1 2 3 4 5 6 7

The post was funny	<input type="range"/>
The post was humorous	<input type="range"/>
The post was amusing	<input type="range"/>

Post-Exposure Affect

Q10_Post Emotions ★ ✕

Indicate the extent to which you feel this way right now:

1 = Not at all 7= Very strongly

1 2 3 4 5 6 7

Interested	<input type="range"/>
Relieved	<input type="range"/>
Hopeful	<input type="range"/>
Disappointed	<input type="range"/>
Frustrated	<input type="range"/>
Upset	<input type="range"/>

Attention Check

Q11_Attention Check 💡 ★ ✕

To show that you are paying attention, please select the Number 4 for this statement.

<input type="radio"/> 1	<input type="radio"/> 4
<input type="radio"/> 2	<input type="radio"/> 5
<input type="radio"/> 3	<input type="radio"/> 6

Brand Attachment

Q12_Brand Attachment ★ ✕

Please indicate your agreement with the following statements about your favorite football club

1 = Not at all 7 = Very strongly

	1	2	3	4	5	6	7
I feel emotionally connected to this team.							
I feel enthusiastic about this team.							
This team is part of me.							
Right now, I like this team.							
At this moment, I trust this team.							

Fan Identification

Q13_FanSelfPercep. 🔍 ★

Overall, how strongly do you identify as a fan of your favorite football club?

	1	2	3	4	5	6	7
	Not at all a fan	Slightly	Somewhat	Moderately	Strongly	Very Strongly	Extremely strongly
I would say ...							

Page Break

Q14_FanEmotional



Please indicate your agreement with the following statements

	1 = Not at all	2	3	4	5	6	7 = Very strongly
When someone criticizes my football team, it feels like a personal insult.							
I am very interested in what others think about my football team.							
When I talk about my football team, I usually say 'we' rather than 'they'.							
The football team's successes are my successes.							
When someone praises the football team, it feels like a personal compliment.							
If a story in the media criticized the football team, I would feel embarrassed.							

Page Break

Q15_Stadium Att.



How often do you attend matches of your favorite football club in the stadium?

	1	Never	2	Once a year	3	2-3 times a year	4	6 times a year	5	Once a month	6	Several times a month	7	Every home match
I attend matches ...														

Page Break

Q16_Match Live



How often do you watch your favorite club's matches live (on TV, streaming, or in the stadium)?

	1	Never	2	A few times a season	3	Once a month	4	Several times a month	5	Weekly	6	I only miss one if I really can't	7	Every match
I watch matches ...														

Demographics

Q17_Age
How old are you?

- Under 18
- 18-24 years old
- 25-34 years old
- 35-44 years old
- 45-54 years old
- 55-64 years old
- 65+ years old

Q18_Gender
How do you describe yourself?

- Male
- Female
- Non-binary / third gender
- Prefer not to say

Thank you Redirect

Thank you Redirect
Thank you for participating in this study! You'll now be redirected to complete your submission on Prolific.

Set Embedded Data:
PROLIFIC_PID Value will be set from Panel or URL. Set a Value Now
Add a New Field
Add Below Move Duplicate Add From Contacts Options Delete

Show Block: Intro (1 Question) Toggle Questions
Add Below Move Duplicate Delete

Show Block: Screening Questions (3 Questions) Toggle Questions
Add Below Move Duplicate Delete

Then Branch If:
If How closely do you follow professional football ? Note: The sliders start at position 1 by default... I follow professional football ... Is Less Than 3 Edit Condition
Or How often do you use Instagram? I use Instagram ... Is Less Than 3 Edit Condition
Or Would you say that you have a favorite football club? No, I do not have a favorite football club Is Selected Edit Condition
Or Would you say that you have a favorite football club? I am unsure/Not really Is Selected Edit Condition
Move Duplicate Options Collapse Delete

Show Block: Screen-Out Message (1 Question) Toggle Questions
Add Below Move Duplicate Delete

End of Survey
Move Duplicate Customize Delete

+ Add a New Element Here

Show Block: Control Variables (4 Questions) Toggle Questions
Add Below Move Duplicate Delete

Show Block: Scenario (1 Question) Toggle Questions
Add Below Move Duplicate Delete

Show Block: Baseline Affect (1 Question) Toggle Questions
Add Below Move Duplicate Delete

Randomizer

Randomly present 1 of the following elements Evenly Present Elements [Edit Count](#)

[Add Below](#) [Move](#) [Duplicate](#) [Collapse](#) [Delete](#)

Set Embedded Data:

Condition = Humor

[Add a New Field](#)

[Add Below](#) [Move](#) [Duplicate](#) [Add From Contacts](#) [Options](#) [Delete](#)

Show Block: Stimuli Humor (1 Question) [Toggle Questions](#)

[Add Below](#) [Move](#) [Duplicate](#) [Delete](#)

Show Block: Stimuli Neutral (1 Question) [Toggle Questions](#)

[Add Below](#) [Move](#) [Duplicate](#) [Delete](#)

Set Embedded Data:

Condition = Neutral

[Add a New Field](#)

[Add Below](#) [Move](#) [Duplicate](#) [Add From Contacts](#) [Options](#) [Delete](#)

[+ Add a New Element Here](#)

Show Block: Humor Manipulation Check (1 Question) [Toggle Questions](#)

[Add Below](#) [Move](#) [Duplicate](#) [Delete](#)

Show Block: Post-Exposure Affect (1 Question) [Toggle Questions](#)

[Add Below](#) [Move](#) [Duplicate](#) [Delete](#)

Show Block: Attention Check (1 Question) [Toggle Questions](#)

[Add Below](#) [Move](#) [Duplicate](#) [Delete](#)

Show Block: Brand Attachment (1 Question) [Toggle Questions](#)

[Add Below](#) [Move](#) [Duplicate](#) [Delete](#)

Show Block: Fan Identification (4 Questions) [Toggle Questions](#)

[Add Below](#) [Move](#) [Duplicate](#) [Delete](#)

Show Block: Demographics (2 Questions) [Toggle Questions](#)

[Add Below](#) [Move](#) [Duplicate](#) [Delete](#)

Show Block: Thank you Redirect (1 Question) [Toggle Questions](#)

[Add Below](#) [Move](#) [Duplicate](#) [Delete](#)

End of Survey [Move](#) [Duplicate](#) [Customize](#) [Delete](#)

Appendix 2: SPSS Output Humor Manipulation Check

→ T-Test

Group Statistics

	Condition	N	Mean	Std. Deviation	Std. Error Mean
Humor_Comb	Humor	112	3.6756	1.72740	.16322
	Neutral	111	2.4324	1.47408	.13991

Independent Samples Test

Levene's Test for Equality of Variances				t-test for Equality of Means							
		F	Sig.	t	df	One-Sided p	Two-Sided p	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
										Lower	Upper
Humor_Comb	Equal variances assumed	4.747	.030	5.779	221	<.001	<.001	1.24316	.21514	.81918	1.66714
	Equal variances not assumed			5.783	216.240	<.001	<.001	1.24316	.21498	.81943	1.66689

Independent Samples Effect Sizes

	Standardizer ^a	Point Estimate	95% Confidence Interval	
			Lower	Upper
Humor_Comb	Cohen's d	1.60631	.774	1.045
	Hedges' correction	1.61179	.771	1.042
	Glass's delta	1.47408	.843	1.127

a. The denominator used in estimating the effect sizes.
 Cohen's d uses the pooled standard deviation.
 Hedges' correction uses the pooled standard deviation, plus a correction factor.
 Glass's delta uses the sample standard deviation of the control (i.e., the second) group.

Appendix 3: SPSS Output H1 (Direct Effect)

→ T-Test

Group Statistics					
	Condition	N	Mean	Std. Deviation	Std. Error Mean
ER_Combined	Humor	112	1.0074	1.43449	.13555
	Neutral	111	.3438	1.20506	.11438

Independent Samples Test												
Levene's Test for Equality of Variances						t-test for Equality of Means						
		F	Sig.	t	df	Significance One-Sided p	Two-Sided p	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference		
										Lower	Upper	
ER_Combined	Equal variances assumed	7.668	.006	3.739	221	<.001	<.001	.66360	.17749	.31380	1.01339	
	Equal variances not assumed			3.742	215.235	<.001	<.001	.66360	.17736	.31402	1.01317	

Independent Samples Effect Sizes					
	Standardizer ^a	Point Estimate	95% Confidence Interval		
			Lower	Upper	
ER_Combined	Cohen's d	1.32526	.501	.234	.767
	Hedges' correction	1.32978	.499	.233	.764
	Glass's delta	1.20506	.551	.277	.822

a. The denominator used in estimating the effect sizes.
Cohen's d uses the pooled standard deviation.
Hedges' correction uses the pooled standard deviation, plus a correction factor.
Glass's delta uses the sample standard deviation of the control (i.e., the second) group.

Appendix 4: SPSS Output H3 (Direct Effect on Brand Attachment)

→ T-Test

Group Statistics					
	Condition	N	Mean	Std. Deviation	Std. Error Mean
Brand_Attachment	Humor	112	5.7964	1.17081	.11063
	Neutral	111	5.6450	1.25007	.11865

Independent Samples Test												
Levene's Test for Equality of Variances						t-test for Equality of Means						
		F	Sig.	t	df	Significance One-Sided p	Two-Sided p	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference		
										Lower	Upper	
Brand_Attachment	Equal variances assumed	1.554	.214	.933	221	.176	.352	-.15138	.16218	-.16823	.47100	
	Equal variances not assumed			.933	219.783	.176	.352	-.15138	.16223	-.16834	.47110	

Independent Samples Effect Sizes					
	Standardizer ^a	Point Estimate	95% Confidence Interval		
			Lower	Upper	
Brand_Attachment	Cohen's d	1.21091	.125	-.138	.388
	Hedges' correction	1.21504	.125	-.137	.386
	Glass's delta	1.25007	.121	-.142	.384

a. The denominator used in estimating the effect sizes.
Cohen's d uses the pooled standard deviation.
Hedges' correction uses the pooled standard deviation, plus a correction factor.
Glass's delta uses the sample standard deviation of the control (i.e., the second) group.

Appendix 5: SPSS Output H2 (Mediation)

```

*****
Model   : 4
  Y     : Brand_At
  X     : Con_num
  M     : ER_Com

Sample
Size: 223

*****
OUTCOME VARIABLE:
  ER_Com

Model Summary
      R      R-sq      MSE      F      df1      df2      p
      .2439    .0595    1.7563    13.9778    1.0000    221.0000    .0002

Model
      coeff      se      t      p      LLCI      ULCI
constant    1.6710    .2803    5.9623    .0000    1.1187    2.2234
Con_num     -.6636    .1775   -3.7387    .0002   -1.0134   -.3138

*****
OUTCOME VARIABLE:
  Brand_At

Model Summary
      R      R-sq      MSE      F      df1      df2      p
      .2086    .0435    1.4144     5.0062    2.0000    220.0000    .0075

Model
      coeff      se      t      p      LLCI      ULCI
constant    5.6434    .2710   20.8255    .0000    5.1093    6.1774
Con_num     -.0305    .1642   -.1856    .8529   -.3542    .2932
ER_Com      .1822    .0604    3.0181    .0028    .0632    .3012

***** DIRECT AND INDIRECT EFFECTS OF X ON Y *****

Direct effect of X on Y
      Effect      se      t      p      LLCI      ULCI
      -.0305    .1642   -.1856    .8529   -.3542    .2932

Indirect effect(s) of X on Y:
      Effect      BootSE      BootLLCI      BootULCI
ER_Com     -.1209    .0529     -.2387     -.0341

***** ANALYSIS NOTES AND ERRORS *****

Level of confidence for all confidence intervals in output:
95.0000

Number of bootstrap samples for percentile bootstrap confidence intervals:
5000

----- END MATRIX -----

```

Appendix 6: SPSS Output H4 (Moderation)

```

*****
Model   : 1
  Y     : ER_Com
  X     : Con_num
  W     : Em_FI_Mn

Sample
Size:   223

*****
OUTCOME VARIABLE:
  ER_Com

Model Summary
      R      R-sq      MSE      F      df1      df2      p
      .2841   .0807   1.7323   6.4116   3.0000  219.0000   .0004

Model
      coeff      se      t      p      LLCI      ULCI
constant  1.6834   .2784   6.0467   .0000   1.1347   2.2321
Con_num   -.6712   .1763  -3.8068   .0002  -1.0187  -.3237
Em_FI_Mn  .2480   .2040   1.2158   .2254  -.1540   .6499
Int_1     -.0720   .1270  -.5666   .5716  -.3224   .1784

Product terms key:
  Int_1      :      Con_num  x      Em_FI_Mn

Test(s) of highest order unconditional interaction(s):
      R2-chng      F      df1      df2      p
X*W     .0013      .3210      1.0000      219.0000      .5716

***** ANALYSIS NOTES AND ERRORS *****

Level of confidence for all confidence intervals in output:
  95.0000

NOTE: The following variables were mean centered prior to analysis:
      Em_FI_Mn

----- END MATRIX -----

```

AI Declaration

During the preparation of this work, I used ChatGPT in order to improve readability and language of the thesis. After using this tool/service, I reviewed and edited the content as needed and take full responsibility for the content of the thesis.