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EMOTIONAL IMAGES, VISUAL ATTENTION AND GAMBLING MOTIVATION: A Neurocommunication Study

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ABSTRACT
This study examines the impact of the emotional valence of gambling-related images (gain, loss, and neutral) on visual attention, emotional responses, motivation to gamble, situational appraisal, and identification with the scene, integrating implicit and explicit measures from a neurocommunication perspective. Using a within-subjects experimental design, the results indicate that gain-related images elicit positive emotions and enhance motivation, appraisal, and identification, whereas loss-related images concentrate visual attention on the human figure and generate negative emotional responses. Gambling frequency particularly amplifies motivational responses to gain-related stimuli.

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1. Introduction

Emotions and images play a central role in persuasive communication. Emotional stimuli attract more attention than neutral ones (Vuilleumier, 2005) and strongly influence attitudes, memory, and motivation (Nabi, 2002). Visual communication, by vividly representing consequences, activates rapid affective responses and experiential processing mechanisms (Houts et al., 2006; Niu et al., 2020). In health communication, the strategic use of positive and negative emotions has been shown to increase preventive effectiveness (Nabi, 2002; Guan & Monahan, 2017): positive emotions emphasize benefits and rewards (Shen & Dillard, 2007; Previte et al., 2015), whereas negative emotions—particularly fear—enhance perceived risk and severity (Witte & Allen, 2000; Marinescu et al., 2022). However, indiscriminate use of negative emotions may elicit reactance, stigmatization, or defensive processing (Agrawal & Duhachek, 2010; Prevention First, 2008; Zimmerman, 1997).

Despite this evidence, emotionally stimulating messages have been scarcely incorporated into problem gambling prevention. Existing strategies largely rely on informational or normative text-based warnings (Horn et al., 2021; Newall et al., 2022), while the systematic use of emotional images has rarely been empirically assessed (Harris et al., 2018; Ray et al., 2024). Emotional messages may be particularly relevant in gambling contexts because attentional resources are highly focused during play, limiting the processing of complex information and favoring low-cognitive-cost emotional stimuli (Diskin & Hodgins, 1999; Harris et al., 2018). Furthermore, such stimuli may activate cognitive schemas and neural networks linked to players' previous experiences (Harris et al., 2018).

At the same time, prevention research has advanced through neurocommunication methodologies that capture implicit responses and reduce self-report biases (Cartocci et al., 2019; Piwowarski et al., 2021). Eye-tracking, in particular, provides a direct indicator of attentional processes during message exposure (Cartocci et al., 2017; Sillero-Rejón et al., 2021). Although these techniques have been widely applied in tobacco (Hammond et al., 2007; Noar et al., 2016; Ross et al., 2023) and alcohol prevention (John et al., 2022; Wigg & Stafford, 2016), their use in gambling prevention remains limited (Ray et al., 2024).

Addressing this gap, the present study examines how the emotional valence of gambling images (gain, loss, and neutral) affects visual attention, emotional responses, and behavioral variables (motivation, appraisal, and identification), integrating implicit and explicit measures to inform more effective preventive strategies.

2. Theoretical Framework

2.1. Emotion and Persuasive Health Communication

Emotions are a cornerstone of persuasive communication. Nabi (2002) argues that emotions do not merely accompany cognitive processing but structure it, directly influencing risk assessment and behavioral intention. Emotional stimuli consistently receive attentional priority over neutral stimuli (Vuilleumier, 2005), reinforcing their role in early persuasive processes. Health communication research has progressively incorporated affective responses as a key factor in message effectiveness (Guan & Monahan, 2017; Nabi et al., 2020), showing that emotion mediates the relationship between message exposure and behavior.

2.2. Positive and Negative Emotions in Health Messages

Positive emotional appeals promote healthy behaviors by emphasizing incentives and benefits (Shen & Dillard, 2007). In alcohol prevention, campaigns based on happiness or well-being can outperform those relying solely on negative emotions (Previte et al., 2015). Fear appeals can be effective when accompanied by high self-efficacy and response efficacy (Witte & Allen, 2000), but among young people or high-risk individuals, they may be less effective or counterproductive (García-Castro et al., 2025; Prevention First, 2008; Zimmerman, 1997). Moreover, negative emotions operate differently: guilt is more effective when linked to the benefits of responsible behavior, whereas shame is more effective when associated with consequences to be avoided (Duhachek et al., 2012). Messages combining positive and negative emotions or generating emotional shifts during exposure tend to increase affective intensity and deepen processing (Carrera et al., 2010; Nabi, 2015; Peinado & Nabi, 2024).

2.3. Images as Emotional Conveyors

Images are among the most powerful tools in health communication. Reviews show that images enhance attention, comprehension, memory, and adherence to healthy behaviors (Houts et al., 2006; Boer et al., 2006), while increasing risk perception and consequence vividness (Seo et al., 2013; Niu et al., 2020). Graphic tobacco warnings exemplify this effect, consistently outperforming text-only warnings in attention capture and intention reduction (Fong et al., 2009; Hammond et al., 2007; Noar et al., 2016; Ross et al., 2023). Similar effects have been observed in alcohol prevention (Wigg & Stafford, 2016), highlighting the versatility of emotional images in public health persuasion.

2.4. Emotional Images and Gambling Prevention

In contrast to other areas of health, the use of emotional imagery in gambling prevention has been scarcely investigated. Ray et al. (2024) note that there are virtually no empirical studies assessing its effectiveness, and that only one has directly examined the impact of graphic warnings in this context: the study by Muñoz et al. (2013). This study found that incorporating a graphic warning into a fear-inducing textual message increased emotional arousal and prompted greater reflection on gambling behavior.

Furthermore, previous research suggests that social consequences, as opposed to material ones, and their framing as losses rather than gains may be more effective in reducing the propensity to gamble, particularly among problem gamblers (Orazi et al., 2015). However, qualitative studies caution that excessively threatening stimuli may lead to stigmatization and avoidance (De Vos et al., 2017), thereby limiting their preventive utility.

On the other hand, there is a notable lack of research on the potential of positive emotions in gambling prevention, despite the accumulated evidence supporting their effectiveness in other areas of public health (Harris et al., 2018). This gap justifies the need to comparatively examine the impact of visual stimuli with positive, negative, and neutral valence on gambling-related perception, emotional responses, and motivation.

2.5. Neurocommunication and Preventive Message Evaluation

Neurocommunication provides an optimal methodological framework for evaluating emotional messages. By capturing implicit responses, these techniques complement self-reports and offer a more precise understanding of attentional and emotional processes (Cartocci et al., 2019; Piwowarski et al., 2021).

Previous studies have shown that brain activity can even predict the population-level impact of health campaigns (Falk et al., 2016), thereby reinforcing the applied value of these methodologies. Tools such as eye-tracking have demonstrated their usefulness in analyzing visual attention directed toward specific message elements (Sillero-Rejón et al., 2021), while facial expression analysis and autonomic responses allow for the inference of the valence and intensity of the emotions elicited (Cartocci et al., 2017).

Although these techniques have been successfully applied in anti-smoking campaigns (Hammond et al., 2007; Noar et al., 2016) and alcohol prevention initiatives (John et al., 2022), their application in the gambling domain remains very limited (García-Castro et al., 2022; Ray et al., 2024). Therefore, integrating emotional images and neurocommunication tools into gambling prevention research represents a promising avenue from both a theoretical and applied perspective

2. Objectives

Based on the theoretical framework presented—highlighting the central role of emotions and images in capturing attention, activating affective responses, and modulating behavioral motivation, as well as the scarcity of empirical research examining these processes in the specific context of gambling prevention through neurocommunication methodologies—the present study aims to systematically examine the impact of the emotional valence of gambling-related images on a range of implicit and explicit processing indicators. Specifically, the study analyzes how visual representations of gain, loss, and neutral outcomes influence visual attention, emotional responses, motivation to gamble, situational

appraisal, and identification with the scene, while also exploring the moderating role of gambling frequency. From this perspective, the study is structured around the following research questions:

RQ1. How does the emotional valence of gambling images (gain, loss, neutral) influence visual attention toward the person and toward the gambling activity?

RQ2. What emotional response patterns are elicited by gain, loss, and neutral images across different gambling modalities?

RQ3. How does the emotional valence of the images affect motivation to gamble, situational appraisal, and identification with the scene?

RQ4. Are there differences in these effects as a function of the type of gambling activity (roulette, poker, and sports betting)?

RQ5. Does gambling frequency moderate the relationship between exposure to emotional images and motivation, appraisal, and identification?

3. Method

A within-subjects experimental design was conducted with a sample of 75 volunteers aged 18 to 25 years (M = 20, SD = 1.49), of whom 72% were women and 28% were men. The independent variable was the type of stimulus, with three conditions based on the type of gambling activity (roulette, poker, and sports betting) and three levels of experimental treatment: pleasant emotion (gain), unpleasant emotion (loss), and neutral (no emotional content). The dependent variables were visual attention, emotional response, motivation to gamble, situational appraisal, and identification. Gambling frequency was also recorded as a moderating variable.

Participants' implicit responses were recorded using Sticky by Tobii Pro, implemented through the NeuroLabCenter neurocommunication laboratory at the Complutense University of Madrid, which enables the online application of eye-tracking techniques.

After viewing each stimulus, participants answered a set of questions regarding the emotion elicited, motivation to gamble, and identification. They also provided demographic information (sex and age) and gambling frequency.

Independent Variables

Type of stimulus. A total of six images were used, two for each type of gambling activity (roulette, poker, and sports betting). Each modality included three conditions based on the emotional valence represented: (1) pleasant, depicting a person displaying a positive emotion associated with a gain; (2) unpleasant, depicting a person expressing a negative emotion associated with a loss; and (3) neutral, showing only the gambling activity, with no human figures or explicit emotional cues.

Dependent variables

Visual attention. Visual attention was assessed using eye-tracking technology. Participants viewed the stimuli through Sticky by Tobii Pro, a remote eye-tracking platform previously used in academic research (Cuesta et al., 2020; Martínez-Martínez, 2025). The system uses the participant's computer camera or an external webcam to detect facial features, locate pupils, and estimate gaze fixation points on the screen.

At the beginning of the experiment, participants completed a calibration procedure. Subsequently, the six stimuli were presented in random order, with an exposure time of six seconds per image. The software allows for the generation of heatmaps and the definition of Areas of Interest (AOIs) to quantify visual attention directed toward specific elements of each stimulus.

Emotional Response. Emotional responses to the stimuli were assessed through self-report using a 5-point Likert scale, ranging from 0 (very little or not at all) to 4 (extremely). Participants rated the intensity of six emotions: joy, sadness, fear (feeling scared), distress, guilt, and excitement.

Motivation to Gamble. To assess the motivation elicited by each image, participants were asked to indicate their level of motivation on a 6-point Likert scale, ranging from 0 (not at all) to 5 (completely), after viewing each image.

Situational Appraisal. Participants evaluated the situation represented in each image using a 6-point Likert scale, indicating the extent to which they perceived the situation as positive or negative, ranging from 0 (not at all) to 5 (completely).

Identification with the Scene. Identification with the scene was measured through a 6-point Likert scale ranging from 0 (not at all) to 5 (completely), assessing the degree to which participants felt identified with the person or situation depicted in the image.

4. Results

Descriptive statistics and inferential analyses were conducted to examine differences across emotional valence conditions and game types. Correlational analyses were used to explore associations between gambling frequency and motivational, evaluative, and identificatory responses. Effect sizes were calculated to assess the magnitude of observed effects.

Figures 1, 2, and 3 display the heatmap comparisons for each type of gambling activity across the three conditions (pleasant, unpleasant, and neutral). The visual scanpath was similar for both pleasant and unpleasant conditions, with the human figure capturing attention first, followed by the gambling interface. Regarding visual attention, two areas of interest (AOIs)—person and game—were defined for roulette and poker, and three AOIs—person, game 1 (mobile), and game 2 (computer)—were defined for sports betting.

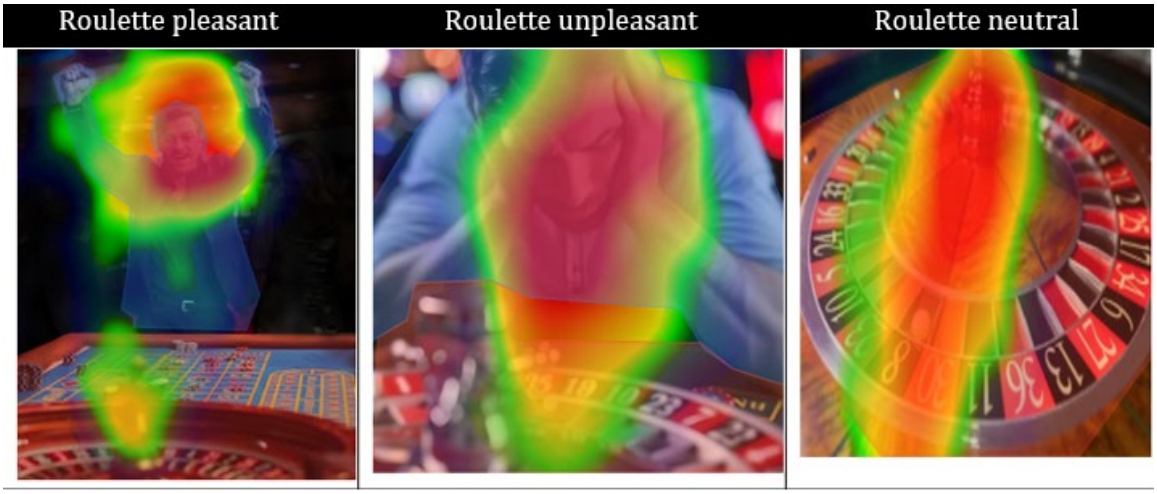
The data show that, in the roulette condition, visual attention to the person was lowest in the pleasant condition among the person-related AOIs analyzed (M = 1.68; SD = 1.18; range = 0.00–5.71), while attention to the game was comparatively higher (M = 1.20; SD = 1.01; range = 0.00–4.93). In the negative condition, attention to the person increased (M = 2.67; SD = 1.20; range = 0.46–5.94), whereas attention to the game was M = 1.00 (SD = 0.81; range = 0.00–3.41), a pattern descriptively consistent with an increased attentional weighting of the human figure in a loss context.

In the online poker condition, pleasant images elicited high levels of attention toward the person (M = 2.66, SD = 1.15; range = 0.39–4.86), while attention to the game interface was also comparatively high relative to the other gambling modalities (M = 1.65, SD = 1.14; range = 0.00–4.94). This pattern suggests a more balanced allocation of visual attention between the protagonist and the interface when the outcome is positive. In contrast, under the negative condition, attention to the person remained high (M = 2.37, SD = 1.31; range = 0.00–4.95), whereas attention to the game decreased (M = 0.84, SD = 0.84; range = 0.00–4.14), indicating a descriptive shift of attentional resources toward the person AOI in the loss scenario

Finally, in the sports betting condition, pleasant images elicited moderate attention toward the person (M = 2.17, SD = 1.08; range = 0.00–4.66). With regard to the interface, attention to AOI Game 1 (mobile) was low (M = 0.49, SD = 0.50; range = 0.00–2.17), while attention to AOI Game 2 (desktop) was slightly higher (M = 0.93, SD = 0.83; range = 0.00–3.28). In the negative condition, attention to the person increased descriptively (M = 2.90, SD = 1.15; range = 0.53–5.84), whereas attention to AOI Game 1 was minimal (M = 0.23, SD = 0.30; range = 0.00–1.25), suggesting a predominant attentional focus on the human figure when the stimulus depicts a loss.

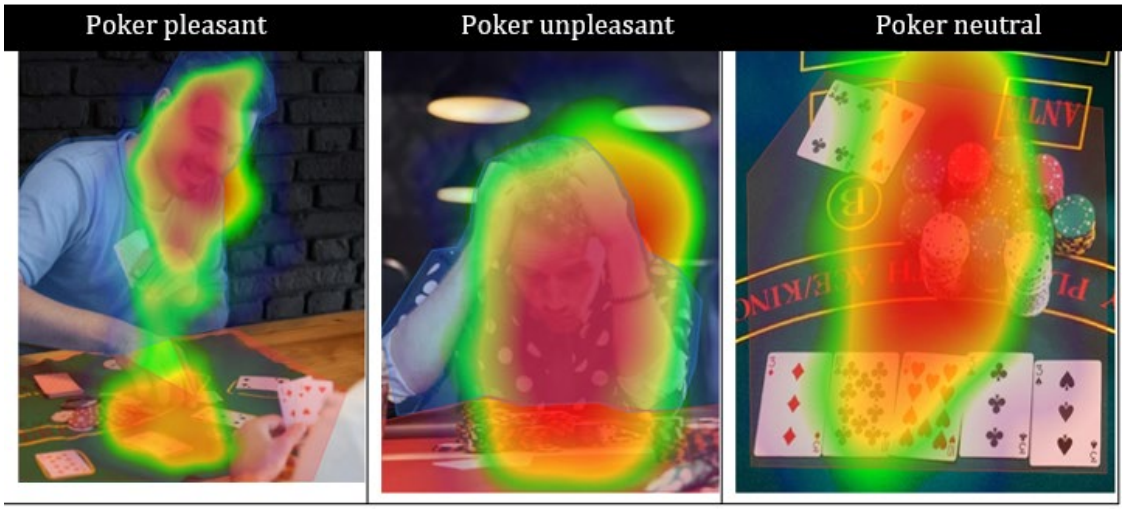
Overall, these findings suggest that visual attention is predominantly directed toward the person, particularly in scenes depicting negative outcomes. A significant AOI effect was observed across all conditions, indicating greater attention to the person than to the gambling interface (Table 1). However, no significant differences emerged as a function of gambling frequency.

Figure 1. *Heatmap* comparison for the Roulette condition



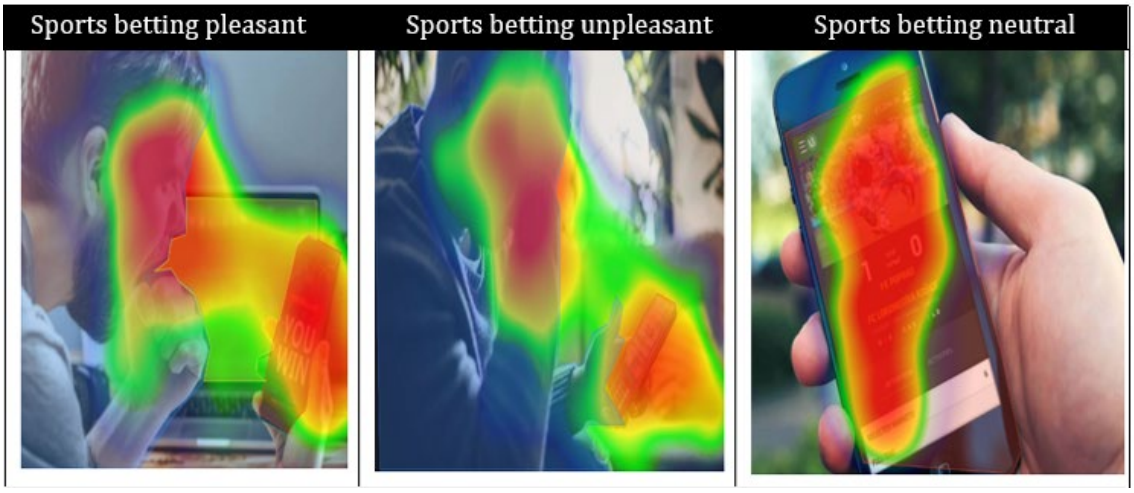
Source: Authors, 2026

Figure 2. *Heatmap* comparison for the Poker condition



Source: Authors, 2026

Figure 3. *Heatmap* comparison for the Sports Betting condition



Source: Authors, 2026

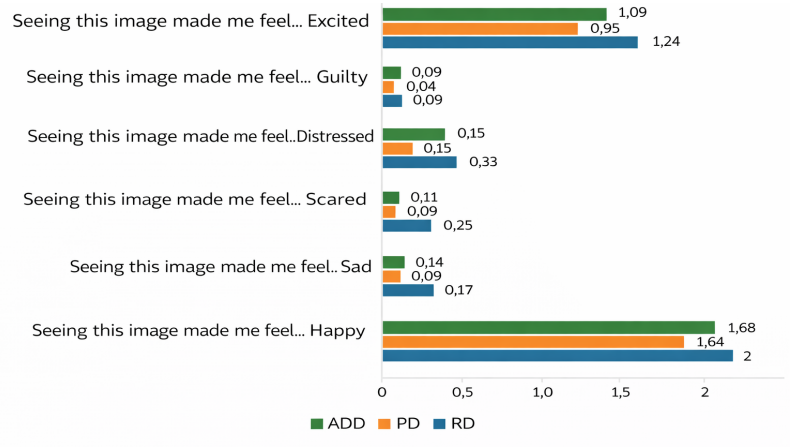
Table 1. Visual attention (AOI): comparison between person and game by modality and condition

Modality/Condition	Comparison	AOI person, M (DE)	AOI game, M (DE)	F(1,75)	p	ηp^2
Sport Betting (pleasant)	Person vs Game 1	2.17 (1.08)	0.49 (0.50)	120.52	< .001	0.62
Sport Betting (pleasant)	Person vs Game 2	2.17 (1.08)	0.93 (0.83)	52.87	< .001	0.41
Sport Betting (negative)	Person vs Game	2.90 (1.15)	0.23 (0.30)	351.35	< .001	0.82
Póker online (pleasant)	Person vs Game	2.66 (1.15)	1.65 (1.14)	18.99	< .001	0.20
Póker online (negative)	Person vs Game	2.37 (1.31)	0.84 (0.84)	63.56	< .001	0.46
Roulette (pleasant)	Person vs Game	1.68 (1.18)	1.20 (1.01)	5.58	.021	0.07
Roulette (negative)	Person vs Game	2.67 (1.20)	1.00 (0.81)	69.43	< .001	0.48

Source: Authors' own elaboration, 2026.

With respect to self-reported emotional responses, the pleasant conditions (Figure 4) were characterized by a predominantly positive emotional profile, with relatively higher levels of joy and excitement and consistently low levels of negative emotions. Joy reached M = 1.64 for roulette, M = 2.00 for poker, and M = 1.68 for sports betting, whereas excitement reached M = 1.24, M = 0.95, and M = 1.09, respectively. In contrast, negative emotions remained low across all pleasant conditions, including sadness (M = 0.09–0.17), fear (M = 0.09–0.25), distress (M = 0.13–0.33), and guilt (M = 0.04–0.09).

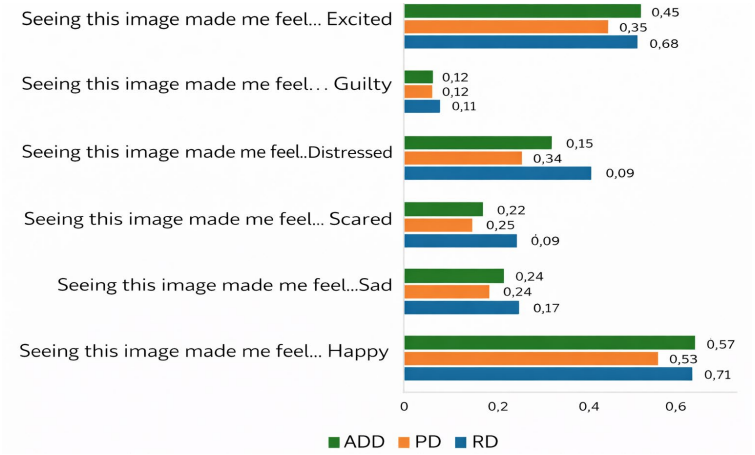
Figure 4. Comparison of emotions elicited by pleasant stimuli



Source: Authors, 2026.

The neutral condition (Figure 5) was characterized by low and relatively stable emotional activation. In this condition, joy ranged from M = 0.53 to 0.71, and excitement ranged from M = 0.55 to 0.68. Negative emotions also remained consistently low, including sadness (M = 0.24–0.34), fear (M = 0.22–0.26), distress (M = 0.34–0.49), and guilt (M = 0.11–0.12).

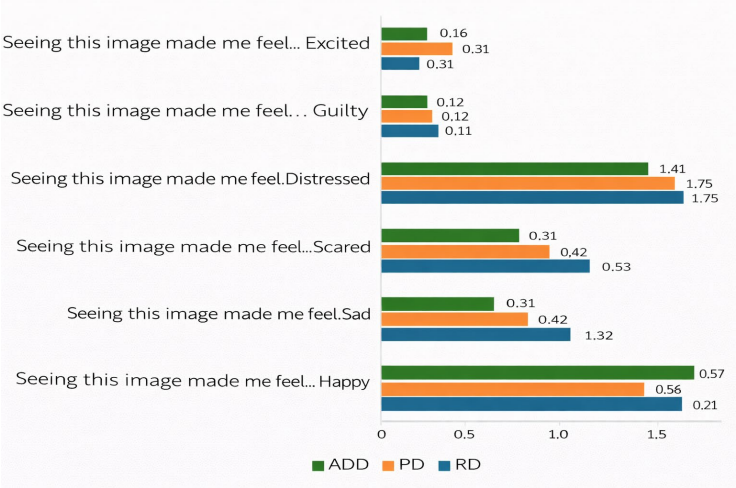
Figure 5. Comparison of emotions elicited by neutral stimuli



Source: Authors, 2026

In contrast, the negative condition (Figure 6) elicited a clearly negative emotional profile, characterized by pronounced increases in sadness and distress, accompanied by elevated levels of fear and guilt, and minimal levels of joy and excitement. Sadness ranged from M = 1.22 to 1.55, and distress from M = 1.41 to 1.75; fear ranged from M = 0.51 to 0.93, and guilt from M = 0.51 to 0.62. Conversely, joy decreased to M = 0.08–0.16 and excitement to M = 0.13–0.28. Across gambling modalities, roulette in the negative condition exhibited the highest levels of sadness (M = 1.55) and distress (M = 1.75), whereas poker in the negative condition showed the highest level of guilt (M = 0.62).

Figure 6. Comparison of emotions elicited by negative stimuli



Source: Authors, 2026

When these differences are examined by gambling modality, a consistent pattern emerges across all three activities: gain-related stimuli significantly increased positive emotions (joy and excitement), whereas loss-related stimuli significantly increased negative emotions (sadness, fear, distress, and guilt). All contrasts were statistically significant (ps ≤ .001), and effect sizes ranged from moderate to very large (partial η^2 approximately .15 to .70), thereby supporting the validity of the affective manipulation.

In the roulette condition, the pleasant stimulus elicited significantly higher levels of joy (M = 1.64) and excitement (M = 1.24) than the negative stimulus (joy: M = 0.08; excitement: M = 0.13), with large effect sizes: joy, $F(1, 75) = 124.03$, $p < .001$, $\eta p^2 = .62$; excitement, $F(1, 75) = 50.04$, $p < .001$, $\eta p^2 = .40$. Conversely, the negative stimulus produced higher levels of sadness (M = 1.55 vs. 0.17), fear (M = 0.93 vs. 0.25), distress (M = 1.75 vs. 0.33), and guilt (M = 0.51 vs. 0.09), with all differences reaching statistical significance: sadness, $F(1, 75) = 80.04$, $p < .001$, $\eta p^2 = .52$; fear, $F(1, 75) = 24.17$, $p < .001$, $\eta p^2 = .24$; distress, $F(1, 75) = 74.49$, $p < .001$, $\eta p^2 = .50$; guilt, $F(1, 75) = 13.93$, $p < .001$, $\eta p^2 = .16$.

In the poker condition, differences between stimuli were particularly pronounced for joy and distress. The pleasant condition elicited significantly higher levels of joy (M = 2.00) and excitement (M = 0.95) than the negative condition (joy: M = 0.14; excitement: M = 0.28), with a very large effect for joy, $F(1, 75) = 176.10$, $p < .001$, $\eta p^2 = .70$, and a moderate effect for excitement, $F(1, 75) = 25.47$, $p < .001$, $\eta p^2 = .25$. In parallel, the negative condition significantly increased sadness (M = 1.22 vs. 0.09), fear (M = 0.82 vs. 0.09), distress (M = 1.64 vs. 0.13), and guilt (M = 0.62 vs. 0.04), with all contrasts reaching statistical significance: sadness, $F(1, 75) = 53.40$, $p < .001$, $\eta p^2 = .42$; fear, $F(1, 75) = 30.09$, $p < .001$, $\eta p^2 = .29$; distress, $F(1, 75) = 87.60$, $p < .001$, $\eta p^2 = .54$; guilt, $F(1, 75) = 21.58$, $p < .001$, $\eta p^2 = .22$.

Finally, in the sports betting condition, pleasant stimuli produced higher levels of joy (M = 1.68) and excitement (M = 1.09) than negative stimuli (joy: M = 0.16; excitement: M = 0.16), with a large effect for joy, $F(1, 75) = 85.70$, $p < .001$, $\eta p^2 = .53$, and a moderate effect for excitement, $F(1, 75) = 33.92$, $p < .001$, $\eta p^2 = .31$. In contrast, negative stimuli significantly increased sadness (M = 1.26 vs. 0.14), fear (M = 0.51 vs. 0.11), distress (M = 1.41 vs. 0.30), and guilt (M = 0.58 vs. 0.09), with all effects reaching statistical significance: sadness, $F(1, 75) = 59.45$, $p < .001$, $\eta p^2 = .44$; fear, $F(1, 75) = 13.48$, $p < .001$, $\eta p^2 = .15$; distress, $F(1, 75) = 50.77$, $p < .001$, $\eta p^2 = .40$; guilt, $F(1, 75) = 13.12$, $p = .001$, $\eta p^2 = .15$.

Overall, the results reveal a clear emotional differentiation by outcome valence across the three gambling modalities. This pattern constitutes a robust manipulation check, as it demonstrates that gain-

related stimuli consistently activate positive affect, whereas loss-related stimuli consistently elicit negative affect. These findings provide a solid empirical foundation for interpreting the subsequent analyses of motivation to gamble, situational appraisal, and identification.

Motivation to gamble reached its highest levels in the pleasant conditions, particularly in pleasant poker (M = 2.00) and pleasant roulette (M = 1.67), and decreased sharply in the negative conditions, with the lowest score observed for the negative roulette stimulus (M = 0.25). ANOVA results indicated significant differences across all three gambling modalities: roulette, $F(1, 75) = 112.27$, $p < .001$, $\eta p^2 = .60$; online poker, $F(1, 75) = 92.65$, $p < .001$, $\eta p^2 = .55$; and sports betting, $F(1, 75) = 33.93$, $p < .001$, $\eta p^2 = .31$.

Situational appraisal reached its highest value in the pleasant poker condition (M = 3.89) and its lowest values across the three negative conditions (M = 0.58–0.71). These differences were also statistically significant for roulette, $F(1, 75) = 64.88$, $p < .001$, $\eta p^2 = .46$; online poker, $F(1, 75) = 386.78$, $p < .001$, $\eta p^2 = .84$; and sports betting, $F(1, 75) = 100.10$, $p < .001$, $\eta p^2 = .57$.

Finally, with regard to identification, the highest level was observed in the pleasant poker condition (M = 1.41), whereas consistently low levels were observed in the negative conditions (e.g., negative roulette M = 0.39; negative poker M = 0.39). Only the negative sports betting condition showed a slightly higher level of identification (M = 0.72). These differences were statistically significant for roulette, $F(1, 75) = 10.25$, $p = .002$, $\eta p^2 = .12$, and poker, $F(1, 75) = 34.22$, $p < .001$, $\eta p^2 = .31$, while the effect was somewhat smaller for sports betting, $F(1, 75) = 7.13$, $p = .009$, $\eta p^2 = .087$.

5. Discussion

The aim of this study was to examine how the emotional valence of gambling-related images (gain, loss, and neutral) influences visual attention, emotional responses, motivation to gamble, situational appraisal, and identification with the scene, integrating both implicit and explicit measures within a neurocommunication framework. Overall, the findings indicate that emotion functions as a central organizing mechanism in the visual and motivational processing of gambling stimuli and that affect-laden images elicit clearly differentiated response patterns depending on their valence.

First, the visual attention results reveal that the human figure consistently attracts a greater share of attentional resources than the gambling interface itself, particularly under loss conditions. This pattern aligns with the literature emphasizing the attentional priority of stimuli containing human and emotional content (Vuilleumier, 2005), as well as with research showing that negative emotions intensify attentional focus on socially salient information. Within the gambling context, this finding is especially relevant, as it suggests that images depicting negative outcomes redirect attention away from the gambling interface toward the human consequences of the situation, potentially encouraging a more critical interpretation of gambling behavior.

In gain conditions, visual attention was more evenly distributed between the person and the gambling interface, particularly in the online poker modality. This pattern may be interpreted as visually congruent with the motivational structure of gambling, in which the protagonist's enjoyment and the interface become integrated into a unified positive experience. From a communication standpoint, this finding reinforces the notion that gain-related images not only elicit pleasant emotional responses but also sustain the visual attractiveness of the gambling activity itself, thereby enhancing their persuasive appeal.

Regarding emotional responses, the findings reveal a clearly differentiated affective profile: gain-related images elicited positive emotions (joy and excitement), whereas loss-related images elicited negative emotions (sadness, fear, distress, and guilt), with effect sizes ranging from moderate to very large. This pattern constitutes a robust manipulation check and closely aligns with theoretical models distinguishing approach-oriented from avoidance-oriented emotions in persuasive communication (Nabi, 2002; Witte & Allen, 2000). Furthermore, it reinforces the validity of images as powerful affective carriers capable of eliciting distinct emotional states, consistent with extensive evidence from other areas of health communication.

The analyses of motivation to gamble, situational appraisal, and identification with the scene reveal a clear and convergent pattern: gain-related images significantly increase willingness to gamble, positive appraisal of the situation, and identification with the protagonist, whereas loss-related images substantially reduce these responses. These findings are particularly salient from a preventive standpoint, as they underscore the strong motivational impact of positive visual representations of

gambling. In other words, gain-related images not only elicit pleasant emotional states but also cognitively reinforce the perceived desirability of gambling behavior and strengthen psychological engagement with the depicted scenario.

This finding directly supports Harris et al.'s (2018) concerns regarding the persuasive potential of emotionally stimulating messages in the gambling domain, and aligns with broader evidence indicating that positive emotions can be especially effective in promoting behavior—even when that behavior entails risk. From this perspective, the results call for critical reflection on the widespread use of positive gambling imagery in media, advertising, and digital environments, as such representations may operate as powerful implicit reinforcers of gambling motivation.

Conversely, although loss-related images elicit intense negative emotions, they do not enhance motivation or identification, suggesting that their communicative function is primarily deterrent rather than persuasive in terms of behavioral approach. However, this effect warrants cautious interpretation, as prior research indicates that the excessive use of threatening stimuli may provoke psychological reactance, stigmatization, or defensive avoidance (Agrawal & Duhachek, 2010; De Vos et al., 2017). Although these mechanisms were not directly assessed in the present study, the findings demonstrate that loss-related images shift attentional focus toward the human figure and activate a strongly negative emotional profile. This configuration may provide a potentially effective foundation for preventive communication, provided that such messages are carefully designed to avoid unintended stigmatizing or counterproductive effects.

A particularly noteworthy finding concerns the role of gambling frequency. Greater prior exposure to gambling was associated with higher levels of motivation, identification, and positive appraisal in response to gain-related images, especially in roulette and poker. This pattern is consistent with research on motivational sensitization and cue reactivity linked to reinforcement processes, widely documented in the field of behavioral addictions. From a communication standpoint, these results suggest that more frequent gamblers not only exhibit heightened responsiveness to positively valenced stimuli but may also be particularly susceptible to the persuasive influence of images depicting gains and enjoyment.

Interestingly, gambling frequency did not moderate visual attention patterns, suggesting that the initial orientation of gaze toward the human figure may be governed by relatively universal, bottom-up attentional mechanisms. In contrast, motivation, identification, and situational appraisal appear to be more strongly shaped by prior gambling experience, indicating that these evaluative and motivational processes are more sensitive to individual differences in behavioral involvement.

Taken together, the findings underscore the value of integrating implicit measures (eye-tracking and facial expression analysis) with explicit self-reports to better understand the impact of emotional imagery in the gambling domain. This multimethod approach captures both automatic attentional and affective responses and the more reflective cognitive evaluations that structure motivation and identification, thereby offering a more comprehensive account of the persuasive dynamics underlying visual communication.

6. Conclusion

Overall, the findings demonstrate that gambling-related emotional images not only elicit differentiated affective responses but also actively shape attention, motivation, and identification with gambling behavior. Gain-related representations function as powerful psychological reinforcers, enhancing willingness to gamble, positive appraisal of the situation, and identification with the protagonist—particularly among more frequent gamblers—whereas loss-related images redirect attention toward the human consequences of gambling and evoke negative emotions that attenuate motivational engagement. These results underscore the substantial implicit persuasive power of gambling-related visual communication and make clear that its design is far from neutral from a preventive perspective. Accordingly, the systematic integration of emotional imagery and neurocommunication tools into the evaluation and development of prevention strategies is not merely advisable but essential. Such an approach may enable the design of more effective interventions—capable of reducing the implicit appeal of gambling, foregrounding its human costs, and tailoring messages to the emotional and motivational profiles of different player segments.

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