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Synthetic Seduction: Evolving Visual Persuasion in Coordinated Online Gambling Promotion with Generative AI

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Abstract

This study examines visual persuasion strategies in online gambling promotion through coordinated Facebook networks. Analyzing 2,300+ images from 223 gambling-focused groups, we employ language models, embeddings, and clustering techniques to identify recurring patterns. Our findings reveal a sophisticated system of persuasive drivers—aspirational wealth imagery, manufactured trust signals, urgency conditioning, cultural localization, gamification techniques, celebrity endorsements, and social relation exploitation—strategically deployed to normalize gambling behaviors. We further investigate how generative AI has transformed this ecosystem. Statistical analysis shows an exponential increase in posting volume following ChatGPT's introduction (November 2022), with monthly posts rising from 2,121 to 280,952. While this correlation doesn't establish direct causality, qualitative evidence suggests generative AI significantly enables this expansion by intensifying established persuasion drivers through enhanced visual immersion and narrative complexity. Our findings contribute to ongoing debates around the intersection of synthetic media and manipulative content in digital spaces. Methodologically, the study demonstrates how generative AI tools can support interpretive analysis at scale. Substantively, it raises urgent questions about user vulnerability and the adequacy of current platform governance and regulatory frameworks in managing the risks posed by algorithmically amplified, AI-generated promotional content.

Keywords: online gambling, visual persuasion, coordinated networks, generative AI, social

media marketing

1. Introduction

As part of the Vera AI project's broader objective to identify and analyze coordinated networks disseminating harmful content on social media platforms, this chapter offers a focused inquiry into one specific manifestation of such coordinated activity: the promotion of online gambling through visual persuasion. While often perceived as a marginal or less harmful domain, the online gambling ecosystem presents a compelling case of algorithmically optimized manipulation, in which persuasive techniques are deployed at scale to exploit cognitive biases, emotional vulnerabilities, and socio-cultural norms (Cemiloglu et al., 2023).

Drawing upon a network of over 200 coordinated Facebook public groups identified by a global-scale implementation of an existing workflow (Giglietto et al., 2023), we examine how gambling-related content circulates through dense and systematic posting behaviors, underpinned by a sophisticated repertoire of visual and semiotic drivers. These include familiar tropes such as aspirational wealth, gamified interfaces, and urgency-based call-to-actions, but also increasingly, synthetic visuals generated by artificial intelligence, which introduce a new aesthetic and affective register into gambling promotion.

This case study contributes to the overarching goals of the project by shedding light on the ways in which coordinated networks mobilize multi-layered persuasive architectures, blending traditional marketing logics with emergent computational techniques. In particular, we interrogate the role of generative AI in enhancing or transforming these visual strategies and consider its implications for user manipulation, platform governance, and regulatory frameworks.

Methodologically, the chapter adopts an innovative mixed-method approach. We leverage large language models to produce both denotative and connotative descriptions of over 2,300 images extracted from the identified network. These textual representations are subsequently

transformed into vector embeddings and clustered to detect recurrent patterns. The resulting clusters are then subjected to a qualitative interpretive analysis aimed at constructing a typology of persuasive visual drivers.

The chapter proceeds as follows. We begin by situating our investigation within relevant theoretical debates concerning digital gambling promotion, coordinated influence operations, and synthetic media. We then detail the methodological pipeline developed within the Vera AI project. The empirical section presents the identified persuasive drivers, with particular attention to the integration of AI-generated content. In the discussion, we consider the broader implications of these findings for computational manipulation, attention economies, and content moderation policies. The chapter concludes with reflections on future research directions and the normative challenges posed by the increasing opacity of algorithmically mediated content of a harmful nature.

2. Theoretical Foundations

2.1. Promoting Gambling Through Digital Persuasion in Algorithmic Environments

The contemporary digital environment is increasingly defined by what scholars term the "attention economy," where human attention is the central resource extracted and monetized by platform capitalism (Tufekci, 2013). Digital platforms do not merely serve as neutral conduits for content distribution; rather, they actively shape visibility, circulation, and impact through complex algorithmic systems (Gillespie, 2014). These algorithmic logics fundamentally reconfigure persuasive communication by enabling new forms of strategic manipulation. In particular, algorithmic amplification creates a feedback loop in which content that elicits high engagement—regardless of its veracity or social value—is prioritized and disseminated more widely (Terenzi, 2024). This dynamic gives rise to what has been termed “algorithmic visibility,” where success is measured not by the quality or relevance of content but by its capacity to trigger platform-specific engagement mechanisms.

This shift represents a marked departure from the broadcast-era advertising model. Instead of delivering mass communication through linear channels, contemporary platforms use continuous data extraction and algorithmic optimization to predict and influence human behavior (Zuboff, 2022). These systems also facilitate coordinated manipulation of information flows, enabling the strategic dissemination of content across accounts, platforms, and formats (Marwick & Lewis, 2017). Unlike traditional propaganda with its centralized and overt messaging, digital manipulation often mimics grassroots activity, masking commercial or political agendas behind a veneer of authenticity. The resulting “spreadability” of content (Jenkins et al., 2018) contributes to the illusion of organic public discourse while reinforcing platform incentives.

A particularly prominent tactic is coordinated sharing—the organized dissemination of content across networks of users, pages, and influencers to simulate grassroots consensus (Giglietto et al., 2020b). Unlike conventional advertising, which typically relies on identifiable branding, coordinated sharing draws on the appearance of peer-driven recommendations to promote targeted messages or behaviors. These campaigns often obscure their commercial ties and strategic objectives, making them difficult to detect (Gleicher, 2018).

This theoretical framework is especially relevant when applied to industries that target vulnerable populations or promote potentially harmful behaviors. The gambling industry, with its well-documented public health implications and sophisticated digital marketing techniques, presents a compelling case. As gambling has expanded digitally, concerns have grown about how it exploits algorithmic infrastructures to circumvent traditional regulatory safeguards and promote risky behaviors. Despite widespread recognition of the public health risks associated with online gambling (The Lancet, 2017), the industry has rapidly expanded its digital footprint (McCormack et al., 2014), using platform affordances to enhance visibility and user engagement while staying within—or just beyond—the boundaries of existing regulations.

Digital gambling marketing today spans a range of strategies, from traditional promotion of betting websites to more immersive tactics such as user interaction on social media platforms (Guillou-Landreat et al., 2021). Facebook and Instagram, for example, enable marketers to insert promotional material into news feeds, stories, and branded pages. Gambling is often linked with sports, entertainment, or cultural events—sometimes even through the creation of branded spectacles—blurring the lines between advertising and social content. These platforms also serve to build online communities and foster brand loyalty (Gainsbury et al., 2015). Particularly effective is the integration of gambling into sports fandom, where betting is framed as a natural extension of the spectator experience. Such normalization is reinforced by metaphors that present gambling as a skill-based activity, akin to training or strategy, which obscures the central role of chance and suggests that expertise can improve outcomes (Lopez-Gonzalez et al., 2018).

Targeted marketing based on gender stereotypes is also central to these strategies. While sports betting and poker are primarily marketed to young men, games such as online bingo are more often directed at women. These campaigns frequently rely on gendered imagery and assumptions, portraying men as confident, strategic gamblers and using soft or domestic visual cues to appeal to women (Deans et al., 2016; Stead et al., 2016). Direct marketing tactics—such as personalized emails, targeted messages, and promotional phone calls—further tailor incentives to drive more frequent and higher-stakes betting (Russell et al., 2018). Gambling is routinely depicted as glamorous and rewarding, with risks downplayed and betting normalized as part of everyday life and social interaction (Deans et al., 2016).

As digital platforms evolve, so do marketing tactics. Increasingly, gambling promotions are embedded within content that appears neutral or educational, making it harder—especially for younger audiences—to recognize them as advertising (Singer et al., 2023). E-sports sponsorships, for instance, target young male gamers and help embed gambling within gaming culture (Biggar et al., 2023). Interactive tools such as polls, contests, and shareable content further enhance engagement and foster a sense of community, although their effectiveness may

vary across cultural and regional contexts (Lindeman et al., 2023). While responsible gambling messages are sometimes included in promotional content, they often serve as superficial gestures of corporate responsibility rather than meaningful efforts to mitigate harm (Hernández-Ruiz & Gutiérrez, 2021).

Collectively, these practices disproportionately affect vulnerable groups—particularly young users and individuals with gambling problems—who are especially susceptible to the persuasive force of algorithmically amplified content (Gainsbury et al., 2016). The convergence of behavioral targeting, algorithmic distribution, and cultural normalization has created a digital environment in which harmful behaviors can be promoted at scale, often bypassing regulatory safeguards designed for traditional media. This alignment of platform capitalism, algorithmic mediation, and targeted marketing represents a major shift in how industries shape public behavior, posing urgent challenges to the adequacy of current public health and regulatory frameworks.

This concern is heightened by the growing convergence of online gambling with digital trading platforms, which similarly raise serious regulatory issues. A study conducted by the Behavioural Insights Team for the Ontario Securities Commission (OSC) examined how investment platforms use gamification to increase user engagement, often without improving long-term financial outcomes (Fleming et al., 2022). The report identified “gamblification” as a common technique to improve user engagement. The gamblification is particularly problematic, as it incorporates gambling-like mechanics into financial trading, thereby blurring the conceptual boundaries between investing and gambling. These concerns align with warnings from the U.S. Securities and Exchange Commission (SEC) (2021), which noted that such features can encourage excessive trading and unsuitable investment decisions, especially among inexperienced users.

2.1.1. Algorithmic Circumvention of Platforms' Advertising Policies and Regulatory Gaps

The strategies outlined above reveal how digital marketing in the gambling industry systematically blurs the boundaries between advertising and organic content, complicating efforts by both platforms and regulators to mitigate gambling-related harm. Within this context, the distinction between paid and unpaid content—central to platform governance—becomes increasingly porous, particularly on Meta’s platforms. Meta’s advertising policies for gambling are relatively well-defined and restrictive: they require advertisers to seek prior written authorization for promotional content involving gambling or gaming services that use monetary value as both an entry mechanism and a potential prize. Advertisers must not only obtain explicit approval but also comply with jurisdiction-specific regulations and meet Meta’s criteria for audience targeting, including a minimum age threshold of 18 years (Meta, 2025).

However, these restrictions apply primarily to paid advertisements. Meta’s policies regarding organic content related to gambling are significantly more permissive. While the platform formally addresses gambling content in its Community Standards—specifically under the “restricted goods and services” section—it does not prohibit organic posts that promote gambling or social casino games, even when these simulate gambling mechanics using virtual currencies. Instead, Meta employs visibility restrictions, limiting such content to users aged 18 and older. Only explicitly fraudulent or scam-related content is categorically banned.

This asymmetry between paid and organic content governance results in a regulatory grey area where gambling-related material can circulate widely without triggering the oversight mechanisms applied to formal advertising. Algorithmically amplified organic content—often indistinguishable from authentic user posts—can therefore function as a powerful tool for marketing gambling services while evading formal advertising constraints. This dynamic mirrors broader patterns discussed in the previous section, where the affordances of platform

architectures enable the spread of persuasive, behavior-shaping content under the guise of peer-driven engagement.

The relative permissiveness of Meta's policies on organic gambling content opens up a critical space for investigation. It invites a closer look at the specific communicative strategies deployed to promote gambling in ways that appear native to the platform environment. These practices offer insights into how marketers exploit the platform's design and moderation logic to normalize gambling, particularly among vulnerable or high-engagement user groups. Against this backdrop, the following research question guides our inquiry:

RQ1. What are the key drivers of online gambling's organic marketing strategies on Facebook?

2.2. AI-generated persuasion in gambling promotion

The regulatory asymmetries outlined above are further compounded by the growing prevalence of AI-generated content on social media platforms. Emerging influence operations increasingly incorporate synthetic text and imagery designed to mimic organic engagement, further eroding the boundaries between genuine user expression and promotional manipulation (DiResta & Goldstein, 2024). As generative AI becomes more accessible and sophisticated, digital environments are becoming saturated with content that is not only fabricated but also strategically engineered to exploit platform logics and attract engagement at scale.

While existing research has extensively explored the marketing strategies employed by online gambling operators on social media, comparatively little attention has been paid to the deployment of AI-generated promotional materials in this domain. The broader scholarly field investigating AI-generated content for marketing purposes remains nascent, though a growing body of work has begun to trace its use in political disinformation and propaganda campaigns (Wack et al., 2025). These studies document how generative AI is employed not just to mislead but to optimize visibility and interaction by mimicking the vernaculars and aesthetic patterns

that thrive within social platforms.

Notably, DiResta and Goldstein (2024) identified 120 Facebook Pages that had posted at least 50 AI-generated images each. Their analysis highlighted a dual pattern: while some content mirrored typical low-effort clickbait—such as surreal baking images with personalized captions—other examples veered into more bizarre or ideologically charged territory, including images like “Shrimp Jesus” or “Crab Jesus” (Koebler, 2024). These forms of synthetic media attracted massive levels of engagement and, in many cases, were linked to clickfarm operations or promotional links to fraudulent websites. Ferrara (2024) has categorized the potential harms associated with such AI-generated content, identifying a broad range of risks including personal deception, financial fraud, misinformation, and sociotechnical manipulation. These tactics often rely on synthetic identities, automated messaging, and misleading visuals to bypass platform moderation while maximizing virality.

Beyond empirical concerns, critical scholars have begun to explore the cultural and ideological dimensions of generative AI content. Watkins (2025), for instance, has described how the “new aesthetics of fascism” can be reproduced through AI-generated visuals that are seductive in form but regressive in message. Similarly, Meyer’s concept of “#PlatformRealism” captures the convergence of meme-driven fascism, neocolonial aesthetics, and influencer grift cultures within a digitally native visual vernacular. Vanicka et al. (2023) contribute the notion of the “machinic gaze” to describe how generative systems participate in the reframing of cultural representation itself. These perspectives underscore that AI-generated content operates within a broader sociotechnical system—one shaped not only by platform architecture and algorithmic incentives, but also by emergent aesthetic codes and political imaginaries.

In this wider context, the application of generative AI to gambling promotion remains notably under-researched. Existing literature has largely focused on how AI is deployed within gambling platforms to personalize user experiences and increase engagement (e.g., (Khan & Farah, 2025), rather than how generative AI is used externally to craft and disseminate

persuasive content. However, early evidence suggests that online gambling operators have begun leveraging AI-generated imagery on Facebook to attract attention and drive traffic (Marino et al., 2025). These developments raise important questions about how such content circulates, how it is visually and rhetorically constructed, and how it may intensify the persuasive strategies already observed in organic gambling promotion.

To address this emerging phenomenon, we propose the following research question:

RQ2. *How has the advent of generative AI influenced gambling promotion in terms of (a) content volume and distribution patterns, and (b) the visual execution and intensity of established persuasion drivers?*

3. Methodology

3.1 Data gathering

The discovery of the network

The network of Facebook groups analyzed in this paper was discovered through a workflow designed to monitor, detect, and iteratively update known lists of coordinated social media accounts. In this study, we specifically examine coordinated link sharing behavior—a technique that identifies social media accounts as coordinated when they repeatedly share identical links within very short time periods (Giglietto et al., 2020a; Yang et al., 2025). The iterative approach of the workflow addresses the dynamic nature of coordinated operations on social media. Rather than providing merely a detailed but static picture of account behavior, the workflow tracks operations over time, enabling academic researchers, fact-checkers, and civil society organizations to observe how coordinated networks evolve.

The workflow begins with an initial seed list of problematic accounts identified through academic research, verified fact-checking databases, and investigative findings. The first

implementation of this workflow was deployed to study the activities of known coordinated accounts leading up to the 2022 Italian election (Giglietto et al., 2023). Building on this experience, the monitoring process was expanded globally, starting with a seed of 1,225 coordinated and problematic Facebook public accounts (Pages or public groups). These accounts were identified because they repeatedly coordinated (time window: 14 seconds, percentage edge weight: 0.995) to spread at least four of the 36,091 web pages flagged as false by Meta's third-party fact-checkers between 2017 and 2022 (Messing et al., 2020).

Between October 2023 and August 2024, this implementation of the workflow (subsequently referred to as "Vera AI alerts") identified 7,068 coordinated posts, 10,681 coordinated links, and 2,126 new coordinated accounts organized across 17 networks. The operation was discontinued on August 14, 2024, due to the deprecation of CrowdTangle.

This paper provides a deep dive into one of the networks discovered by the Vera AI alerts. Composed of 223 public groups, this network was specifically dedicated to sharing posts that promoted gambling activities. The network published over 10,000 posts per hour on average.

Getting the posts and related multimedia content (MCL and images MCL downloader)

To better understand the gambling promotional strategies employed by these networks, we set up to study the visual content posted by these coordinated groups. To do so, we relied on a new tool developed by Meta with the aim of increasing the platform's transparency. The Meta Content Library (MCL) is an interactive dashboard that allows users to search a real-time public content dataset of posts circulating on Facebook, Instagram, and Threads. Among the different search features, the MCL enables users to upload and manage lists of producers (this is the name used in the tool to refer to a range of social media spaces - from individual profiles to Pages, events, and groups - where posts appear). A subset of the public content created by widely popular producers can be downloaded as a CSV file for further analysis. The CSV contains a set

of variables that describe the posts and include a link to the multimedia contents (images, video, reel, etc), eventually embedded in the post.

Using these features, we created a list of producers with our 223 groups. We used this list to search for all the posts (empty query) created by these groups between 13 January 2017 and 7 September 2024. The search on the public content dataset returned over 70 million posts, but only a fraction of these (N=10,671) met the criteria for inclusion in the downloadable datasets of popular producers (Pages with 15,000 or more likes or followers, Profiles with 25,000 or more followers, and verified Profiles). As of May 2025, among the subset of these groups that remain active, membership sizes range from a minimum of 31,808 to a maximum of 612,736, with an average membership count of approximately 200,000. These figures provide insight into the current scale and potential reach of the producers still active at the time of analysis.

To collect the images embedded in the post, we developed a custom script that automates the process of downloading the multimedia content from the links provided in a CSV obtained from the MCL¹. The script has been carefully designed to comply with the research data agreement signed by the researchers to secure access to the MCL. The download process is performed entirely client-side on the user's browser, and only authorized users can use these links. A report is also created to preserve the relationship between original posts and the respective downloaded multimedia files.

Using these tools, we collected all 2,323 distinct images embedded in the dataset of posts we downloaded from the library.

Using OpenAI's model to get a connotative and denotative description of the images

Downloading multimedia content is often instrumental for qualitative and quantitative social media analysis. Making sense of this content is particularly important as users have progressively shifted to social media platforms where moving and still images are central.

¹ The tool is publicly available at <https://massimoterenzi.com/mcl-media-downloader/>.

At the same time, the analysis of heavily visual social media posts has been traditionally hindered by the combination of large datasets and intrinsic nuances in the interpretation of still and moving images. Automated analysis based on the extraction of features from digital images is not new (Yu et al., 2023). However, the advent of Large Language Models capable of automatically describing images is increasingly seen as an alternative promising approach (Stephan et al., 2024). Leveraging the validation results demonstrating that VLLM-based approaches can improve semantic clustering over CNN-based methods (Arminio et al., 2024), we used OpenAI's *gpt-4o-2024-08-06* to generate both a denotative (literal, objective) and connotative (associated feelings, ideas, and cultural meanings) description of our dataset of images (the full prompt and an example of denotative and connotative descriptions are available in the appendix). The results of the prompt were used without further post-processing. These types of human-AI collaborations for qualitative content analysis are becoming increasingly common in social science research (Chew et al., 2023; Dai et al., 2023; Fan et al., 2024). Scholars have argued that LLMs can perform deductive qualitative coding at a level comparable to and agreeable to human researchers (Chew et al., 2023). Large language models (LLMs) can assist in thematic analysis by replicating human-level coding quality while significantly reducing time and labor demands. In particular, LLM-in-the-loop frameworks using in-context learning have shown that models like GPT-3.5 can generate codebooks and perform interpretive tasks comparable to human coders (Dai et al., 2023); in our study, we adopt this approach using the more advanced GPT-4o model. To ensure robustness of our analysis, a quarter (n=85) of our identified 366 connotative and denotative clusters were coded by the four authors until thematic saturation was reached.

3.2 Data analysis

Embedding and clustering of the two sets of descriptions

Given the final goal of identifying the main drivers used by these groups to promote gambling with visual content, we designed a clustering strategy aimed at taking into account both the connotative and denotative dimensions of the visual elements of our posts.

The strategy starts by transforming both the connotative and denotative descriptions into embeddings using OpenAI's *text-embedding-3-small* model. The clustering was performed separately on the denotative and connotative descriptions using the procedure described in Figure 1.

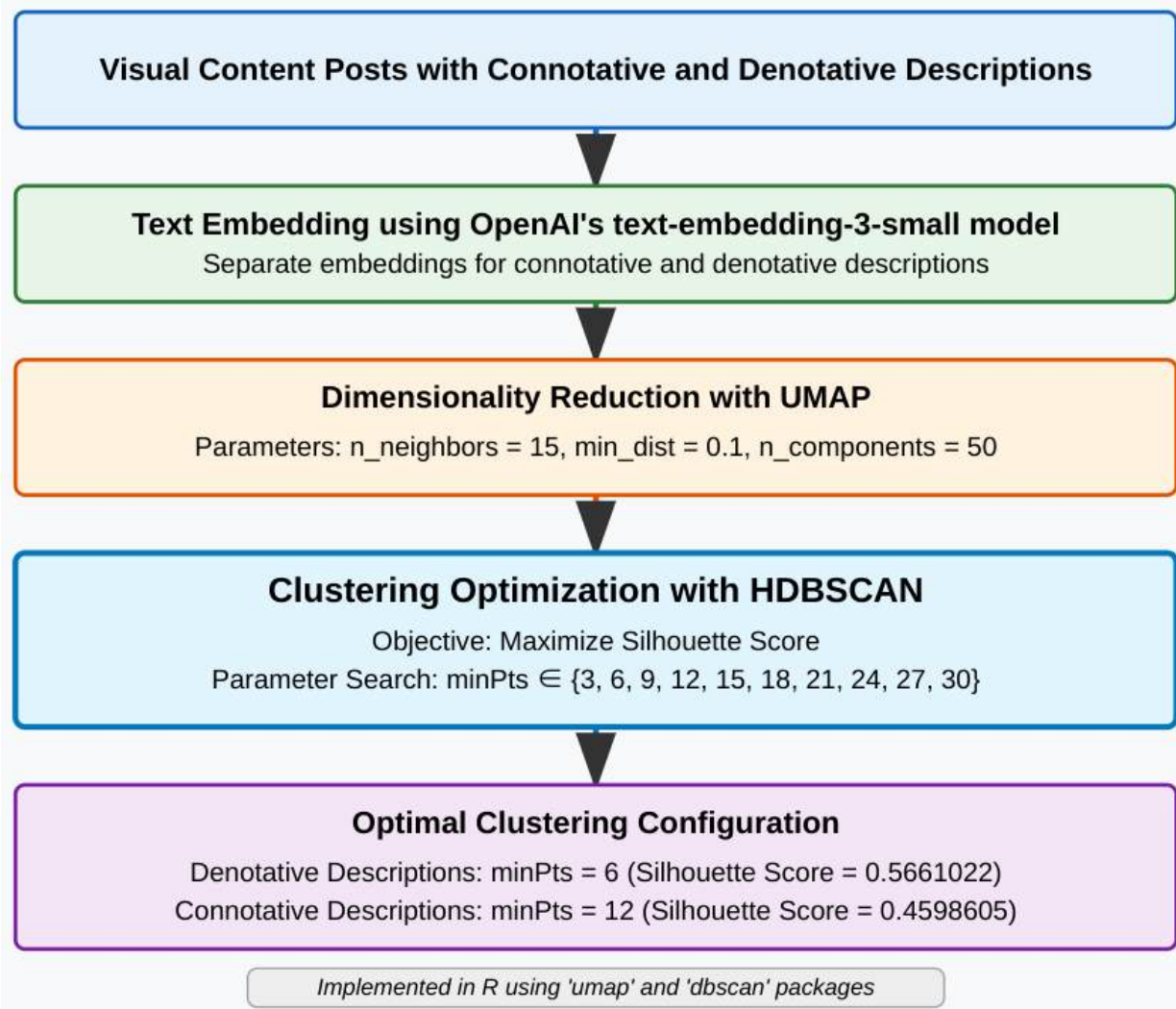


Figure 1. The entire process was performed in R with packages UMAP and HDBSCAN

The clustering process generated 51 clusters for the connotative descriptions and 101 for the denotative descriptions. The noise cluster included 390 and 258 images, respectively.

Co-occurrence matrix of images included in the same connotative and denotative clusters

To identify the most frequently employed drivers for gambling incitement, we constructed a co-occurrence matrix of images that appeared in both connotative and denotative clusters. Our premise is that specific combinations of connotative and denotative descriptions indicate images depicting a particular driver.

We ranked all 366 combinations of connotative and denotative clusters by frequency of assigned images (maximum=87 images). We then initiated a manual content analysis process to describe the emerging gambling incentive strategies. Combinations containing noise clusters and a single combination of two noise clusters were excluded from the analysis (N=78).

Qualitative content analysis of clusters and deductive drivers identification

To analyze the co-occurrence patterns and deduce the key drivers (RQ1), our team employed a systematic qualitative content analysis approach. All four authors participated in the analytical process, examining each combination of connotative and denotative clusters containing more than six images. In total, 85 such combinations were examined to reach thematic saturation.

The analysis followed an iterative coding procedure until theoretical saturation was reached for each driver, indicated by the reoccurrence of the same gambling driver across multiple combinations. This saturation point signaled that additional sampling would not yield new insights regarding the particular driver.

Each researcher independently analyzed 21 cluster combinations, documenting emergent patterns and thematic elements. For each combination, coders were tasked with identifying the

underlying gambling driver and formulating a concise descriptive label that captured the essence of the cluster combination.

Through consensus-building discussions, the research team consolidated their individual analyses, resolving any interpretive discrepancies to ensure analytical rigor and intercoder reliability. This collaborative approach enhanced the trustworthiness of the findings while allowing for the nuanced interpretation of visual elements that constitute gambling incentive strategies.

The resulting typology of drivers offers a framework for understanding the visual rhetoric employed to stimulate gambling behaviors across the analyzed materials.

Measuring the Impact of Generative AI on Gambling Promotion Strategies

To investigate how generative AI has influenced gambling promotion (RQ2), we employed a mixed-methods approach. For examining content volume changes (RQ2a), we utilized the Meta Content Library API to collect monthly post count estimates from 223 gambling-related Facebook groups identified through the Vera AI alerts workflow. We analyzed data spanning January 2017 through September 2024, with ChatGPT's launch date (November 30, 2022) as our intervention point. Statistical significance was assessed through multiple complementary approaches: two-sample hypothesis tests (t-test, Wilcoxon rank-sum), regression models with interaction terms to capture both level and slope changes, and time series analyses including structural break detection. This allowed us to quantify the magnitude and statistical significance of changes in promotional volume. For analyzing how persuasion drivers were executed in AI-generated content (RQ2b), we conducted a qualitative analysis of visual content before and after ChatGPT's introduction. We examined a subset of 2,323 images embedded in posts, focusing specifically on how the persuasion drivers identified in RQ1 were being visually rendered in probable AI-generated content. We noted a thematic saturation in the narrative

elements of the AI-generated images, as observable in the most viewed posts in the post-ChatGPT period. We analyzed elements such as visual style, image composition, color schemes, character representation, and narrative complexity to determine how generative AI technologies have intensified or transformed the presentation of established persuasion tactics rather than creating entirely new strategies. The top two most viewed such images—which are emblematic of AI-generated visuals from the dataset—are presented in the chapter.

4. Analysis

4.1 The key visual drivers

The manual coding of visual content disseminated by gambling-related Facebook pages and groups reveals a sophisticated system of persuasive strategies employed by the owners and administrators of such pages. The visuals do not merely serve an aesthetic function; rather, they operate as carefully planned stimuli designed to capture attention, sustain engagement, and normalize gambling behaviors through multilayered psychological and cultural triggers. In the following paragraphs, we explain the key drivers that we identified in these images that we argue can act as potential triggers for users to engage in online gaming and gambling.

Aspirational Wealth and Hyper-Masculine Status Fantasies

Central to the visual economy perpetuated by these visuals is the deployment of aspirational motifs. In our analysis, aspirational motifs—such as luxury symbols, high-status figures, and narratives of upward mobility—emerge as a recurrent strategy in approximately 55% of the analyzed connotative and denotative combinations. This notable prevalence confirms that such motifs are not marginal embellishments, but rather constitute a central visual logic in gambling promotion. Their consistent appearance across different clusters suggests a deliberate effort to frame gambling as a pathway to success, power, and social recognition. Luxury vehicles,

premium brands, and high-status objects frequently appear in direct association with gambling-related messaging, constructing a narrative that links betting activities to wealth accumulation, masculine power, and upward social mobility. These images mirror the structure of head-to-head showdowns, linking gambling participation to the excitement of winning against an opponent and the validation provided by public recognition through social media reactions and comments. Such images evoke the dynamics of competition and control, mirroring the logic of gambling itself, where personal risk-taking attitudes are portrayed as paths to financial success and status elevation.

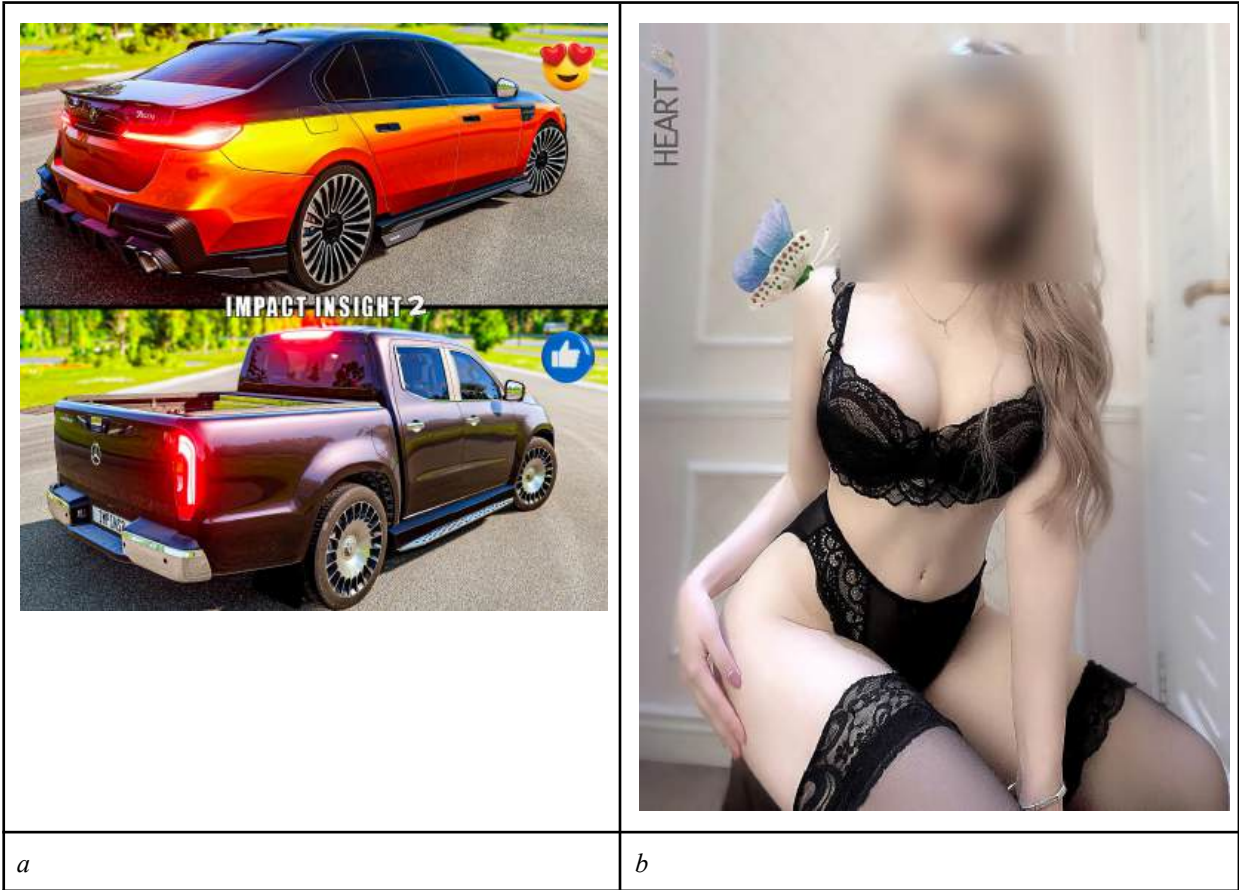


Fig. 2 – (a) Side-by-side display of luxury cars used to associate gambling with wealth, competition, and masculine status. (b) Woman in lingerie positioned next to promotional gambling content, exemplifying the use of sexualized femininity to enhance aspirational appeal.

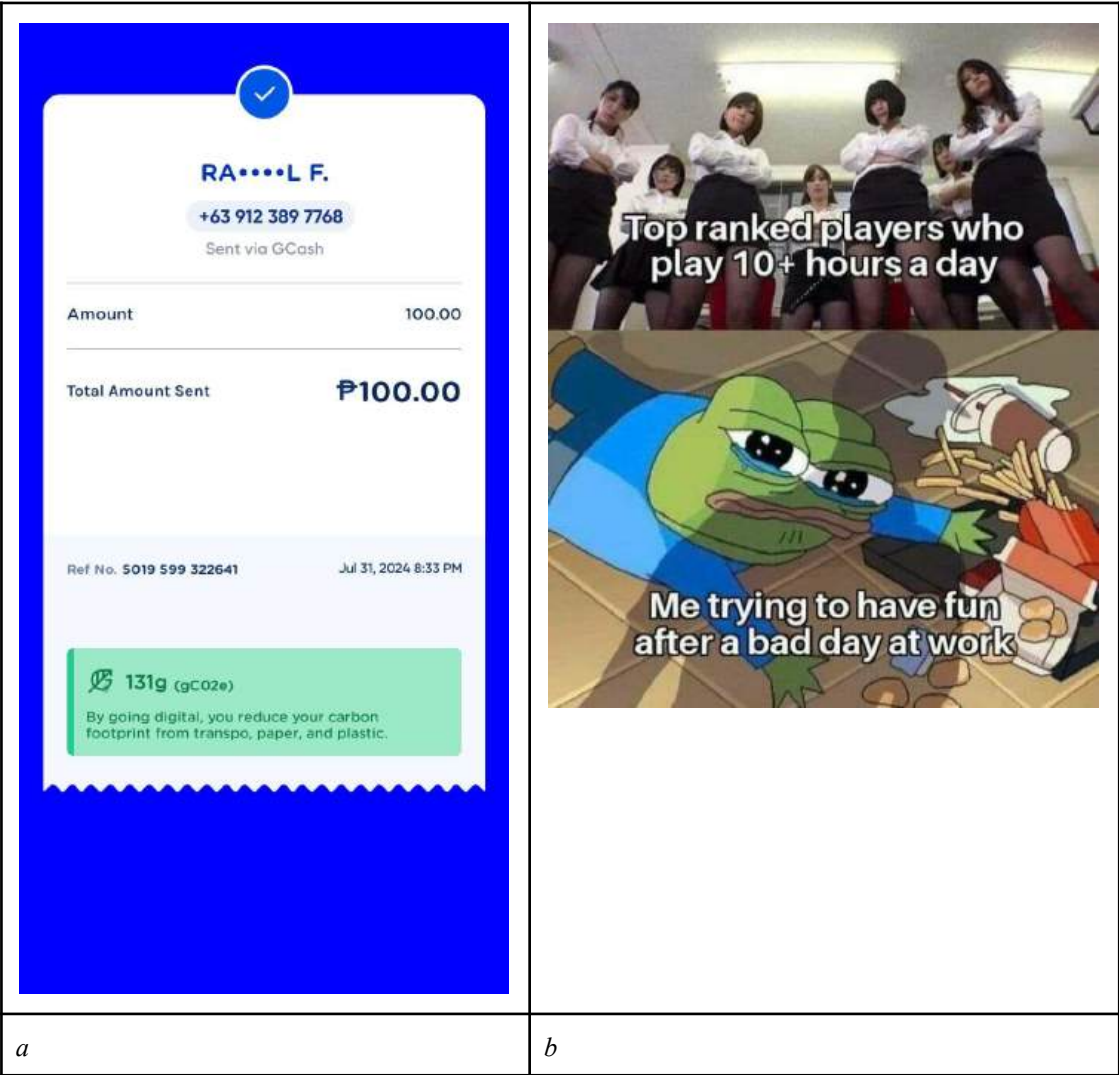
A further dimension of these strategies involves the deliberate use of sexual and physical attractiveness. Women in lingerie or suggestive poses (often Asian models to align with regional beauty standards, see Fig. 2b) are strategically positioned adjacent to bonus offers or jackpot

announcements. This aesthetic choice appears recurrent within one of the combinations identified, suggesting a shared ideal of femininity—potentially generated or curated for geographically targeted promotional strategies—in line with the presence of linguistic clusters that also point to geo-specific targeting logics. We can argue that these images depict women in revealing clothing or intimate scenarios to immediately capture attention and enhance the desirability of the gambling context. These visuals are not limited to mere attractiveness but are carefully situated in aspirational, elegant environments—lavish settings, luxury items, and symbols of affluence—that suggest gambling as a conduit to a sophisticated and rewarding lifestyle. These images appear to reflect the same aspirational masculine imaginary observed in the depiction of luxury cars and competitive scenarios (Fig. 2a): a symbolic universe where power, control, and success are associated with dominance, ownership, and the capacity to attract and display beauty and wealth. The presence of warm, intimate images, including close-up smiles and body language signaling openness and familiarity, is supposed to foster connections and trust. By combining visual seduction with lifestyle aspiration, these images simultaneously stimulate desire and offer a fantasy narrative in which participation in gambling platforms promises access to wealth, pleasure, and social recognition.

Manufactured Trust Through Transactional Proofs

Speaking of trust, a number of posts shared by these pages include images that can be decoded as manufacturing trust among their core user base. Approximately 37% of the combinations analyzed include transactional visuals that function as trust-building devices, reinforcing perceptions of legitimacy through financial documentation. Visual proof-of-payment artifacts, transaction screenshots, and cash-out confirmations are recurrent features. These elements function as performative demonstrations of trustworthiness, using financial documentation to mitigate skepticism and establish platform credibility. The use of recognizable financial

intermediaries (such as GCash, which is a well-known payment app in the Philippines) fosters a perception of legitimacy and transparency, while repeated displays of recent and frequent payouts reinforce the illusion of widespread success and collective participation (Fig. 3a). This dynamic is further intensified by the integration of humor and social bonding mechanisms. Memes and humorous content referencing gambling losses are deliberately employed to diffuse cognitive despair associated with losing money, transforming individual failure into a shared cultural experience that legitimizes continued engagement (Fig. 3b). The underlying psychological strategy is clear: by reframing losses as frequent occurrences, something that is to be seen with a sense of humor, these pages encourage their users to develop the habit of repetitive betting.



a

b

Fig. 3. (a) Mobile payment receipt illustrating the use of micro-transactions in gambling flows. (b) Meme depicting emotional exhaustion and escapist gaming behavior through ironic imagery.

The prominence of transaction-based trust inducing drivers in the visual material underlines the platforms' strategic awareness of user skepticism. Screenshots of successful withdrawals, complete with reference numbers and timestamps, are paired with celebratory messages and positive affirmations (“Transfer successful”, “Withdrawal completed”) to construct a sense of reliability and organizational efficiency. In addition, the frequent depiction of promotional incentives—such as “first deposit bonuses,” “rebate systems,” and “activity-based rewards”—can be interpreted as a strategy of the pages to cushion the psychological impact of losing by offering additional incentives to continue playing. Progress bars, daily login bonuses, and persistent notifications simulate a sense of gain for the users even when they are losing. This mechanism is well-documented in HCI and gambling research, where interface features such as progress indicators, reward animations, and loss-disguising feedback loops have been shown to reinforce habitual engagement and perceived advancement, even in the absence of actual wins (Frommel & Mandryk, 2022; Hing et al., 2014). This, in turn, helps exploit the sunk-cost fallacy, making disengagement increasingly difficult as users invest more time and resources.

Conditioning through FOMO strategies

These mechanisms of persuasion are further reinforced by the omnipresence of urgency-inducing design elements. Dynamic countdown timers, flashing “claim” buttons, and time-limited offers create a context of artificial scarcity, exploiting well-documented cognitive biases such as the fear of missing out (FOMO) and immediacy bias (Frommel & Mandryk, 2022). The interface design emulates the slot machine environment, using bright gradients, animated icons, and reward escalation mechanisms to produce continuous reward anticipation cycles (Fig. 4).

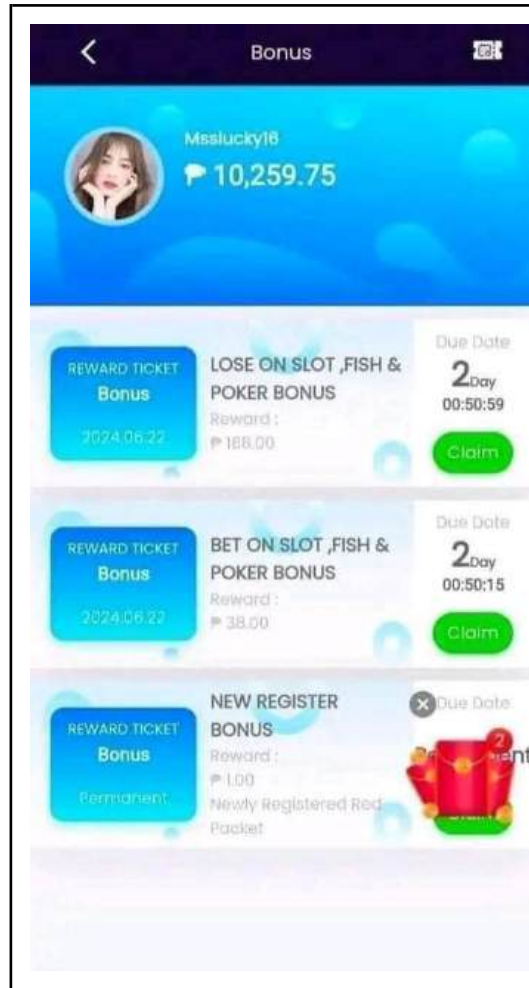


Fig. 4. – Countdowns and calls to action prompting users to claim rewards

This architecture reflects principles of operant conditioning, a psychological process in which behavior is shaped and reinforced through repeated exposure to rewards and punishments (King et al., 2011). In this context, progress indicators, incremental bonuses, and multi-level reward ladders act as reinforcing stimuli that encourage users to repeat gambling-related actions. This architecture systematically conditions users to engage in repetitive behaviors by alternating between rewards and small, predictable reinforcements, embedding gambling behaviors into habitual digital routines.

Gamification tactics and low entry barriers

Another important driver utilized by these pages is the deployment of gamification techniques

that replicate slot-machine logic in mobile app environments. The presence of spin buttons, multipliers (such as 10x or 20x), visual representations of quests (temples, treasures, pirate adventures), and escalating reward systems contribute to an immersive, overstimulating environment (Fig. 5a). At the same time, the posts arguably lower cognitive barriers through infantilized design: pastel color palettes, cartoon-like treasure chest animations, and playful terminologies obscure the underlying financial predation. Such interfaces are designed to make the gambling experience approachable, playful, and seemingly risk-free.

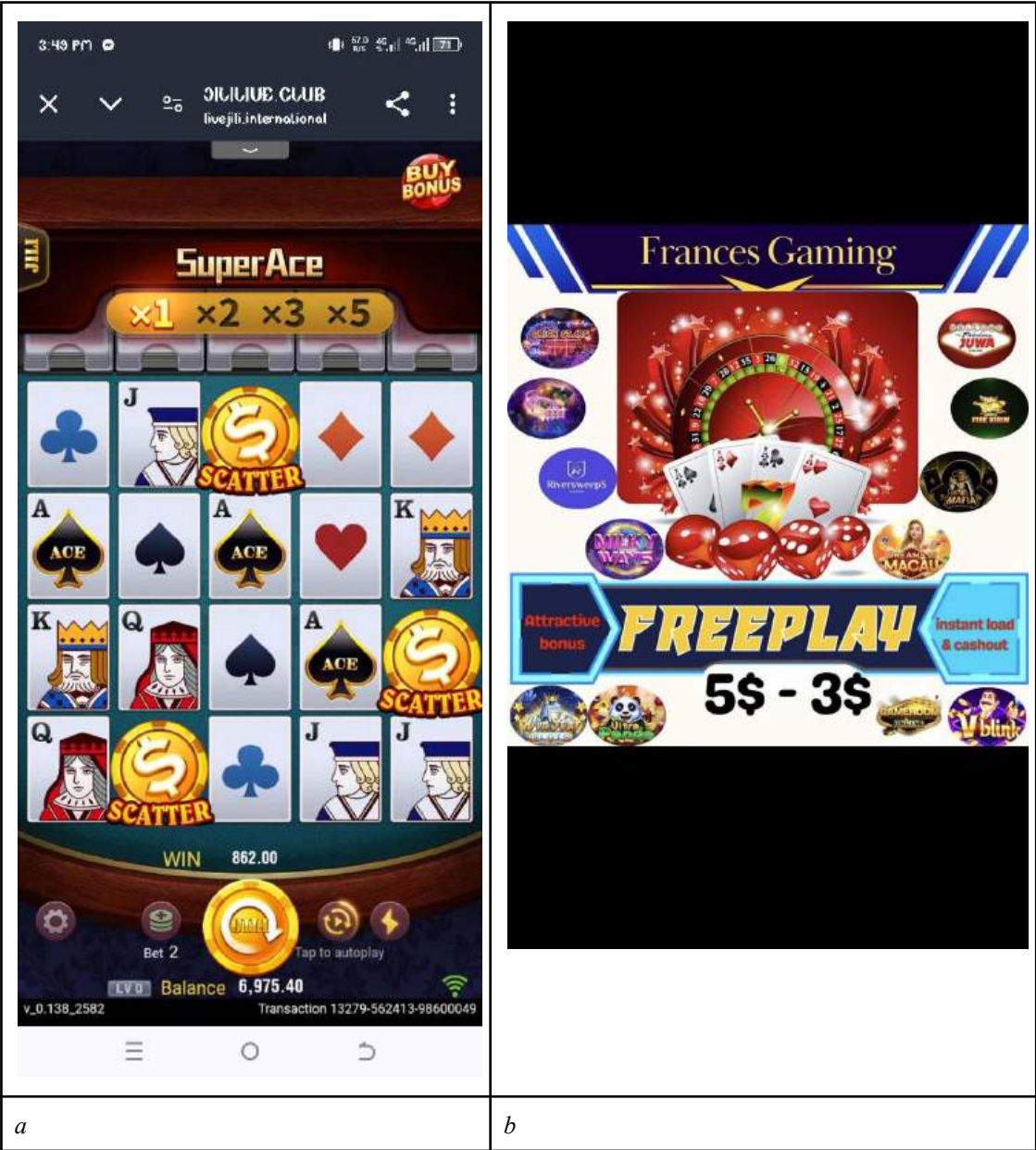


Figure 5. (a) Interface displaying spin buttons and multipliers, emulating slot-machine

mechanics. (b) Promotional content highlighting “free play” incentives, creating an illusion of risk-free gambling to entice users.

This is coupled with reward structures that blur the boundary between play and financial commitment. Low-entry incentives, such as “\$2 free play” or “₱0.50 bets”, are prominently displayed next to screenshots of large winnings, creating the illusion that small investments can yield disproportionately large returns (Fig. 5b). This psychological mechanism exploits the gambler’s fallacy and the illusion of control (Xu & Harvey, 2014), fostering continued engagement even in the face of repeated losses.

Celebrity and influencer endorsements

Another strategic lever is the use of celebrity and influencer endorsements, with public figures lending their credibility and aspirational status to gambling brands (Fig. 6a). The presence of well-known athletes or media personalities creates the illusion of platform legitimacy and appeals to national pride, cultural familiarity, and trust. These figures are often embedded within professionally designed promotional layouts, dressed in branded apparel, or seen posing with items such as microphones, championship belts, or platform logos (Fig. 6b). Such visual elements strengthen the association between the celebrity’s public reputation and the credibility of the gambling service.



Figure 6. (a) Promotional collage combining exaggerated winnings and sexualized imagery
 (b) Celebrity endorsement leveraging national pride and masculine ideals

In particular, the use of national sports figures leverages affective bonds of national identity and broader masculine ideals of success, discipline, and financial reward. In doing so, the endorsement transfers symbolic capital from the public figure to the gambling brand, situating gambling participation not only as acceptable but as aspirational and even patriotic (Kroon, 2020). The graphic style of these posts also blends corporate polish with emotional appeal: bold fonts, high-contrast colors, and celebratory poses convey excitement while simultaneously offering reassurance through familiarity and trust in the endorser's image.

Exploiting social relations

The visual system is embedded in a networked architecture of social relations exploitation. Many images explicitly encourage users to “invite friends” and share content within social groups, turning players into active recruiters and amplifiers of the platform's messaging (Fig. 7). The convergence of aspirational imagery, emotional manipulation, urgency mechanisms, cultural targeting, gamification, transactional transparency, and viral dissemination strategies

reveals a complex, self-reinforcing ecosystem of attention capture and behavioral conditioning.



Figure 7. Viral recruitment through reward-based sharing and aspirational imagery.

Cultural and Linguistic Localization

Particularly noteworthy and covert is the targeted use of cultural cues and linguistic localization. 56 clusters show use of Filipino and Urdu languages, integrating gambling promotion with culturally specific symbols, idioms, and social norms. In the case of Filipino-language content, references to group pressure, peer dynamics, and familiar cultural motifs (such as local slang and humor) facilitate the naturalization of gambling as a community practice. Even more strategically complex is the Urdu-language cluster, which departs from explicit gambling promotion to engage in covert ideological messaging. The imagery in this cluster is dominated by emotionally charged depictions of women in distress, domestic conflicts, and performing traditional roles while the accompanying male figures are distant or downright abusive (Fig. 8a-b).



Figure 8. (a–b) Urdu-language content leveraging emotional distress and cultural conservatism to embed gambling promotion.

This cluster features visual elements—ranging from denotative cues such as tears, physical harm, and abandonment, to connotative framings that evoke narratives of victimhood, betrayal, and the collapse of traditional family values. These semiotic components contribute to an orchestrated effort to exploit collective emotional and moral sensibilities. The visual strategy appears designed to reinforce cultural conservatism and social cohesion around specific ideological axes, while subtly embedding gambling platforms within these broader moral narratives. The repetition of similar scenarios, coupled with moralizing captions and traditional symbols, suggests a recurring discursive pattern in which gambling promotion intersects with attempts to shape cultural identity and public sentiment.

Driver	Key Points & Examples
Aspirational Wealth & Hyper-Masculine Fantasies	<p>Luxury signaling: Mercedes, BMW M-series cars; Rolex watches; cash stacks. Links gambling to wealth/power.</p> <p>Competitive framing: “Head-to-head showdowns” mimicking</p>

	<p>viral challenges; leaderboards.</p> <p>Sexualized incentives: Asian models in lingerie adjacent to jackpot ads; women in lavish settings admiring cash, aligned with masculine status tropes</p>
Manufactured Trust via Transactional Proofs	<p>GCash/PayPal receipts: Timestamped "Transfer Successful" screenshots with reference numbers.</p> <p>Humor normalization: Memes about losses (e.g., "When you lose your salary, but the reload bonus hits").</p> <p>Loss compensation: "First deposit bonuses", "rebate systems".</p>
FOMO & Urgency Conditioning	<p>Countdown timers: "00:12 left to claim!"</p> <p>Artificial scarcity: "VIP tier" promotions; "7-day offers".</p> <p>Operant conditioning: Progress bars, daily login bonuses, "sunk cost" thermometers.</p>
Cultural & Linguistic Localization	<p>Filipino targeting: Peer pressure via <i>barkada</i> (group) dynamics; <i>hugot</i> culture humor ("Tropa mong nag-aaya na naman mag-scatter").</p> <p>Urdu moral engineering: Domestic violence imagery; tears/abandonment scenes tied to conservative values.</p>
Gamification & Low Barriers	<p>Slot machine mimicry: Spin buttons, 10x–20x multipliers.</p> <p>Infantilized design: Cartoonish treasure chests, pastel colors.</p> <p>Micro-incentives: "₱0.50 bets" next to large win screenshots.</p>
Celebrity Endorsements	<p>Trust transfer: Manny Pacquiao with championship belt imagery ("biggest and most trusted").</p> <p>Sports synergy: Basketball courts in ManilaPlay ads; athlete cameos.</p>
Exploiting social relations	<p>Viral recruitment: "Invite 3 friends to unlock Gold status!"</p> <p>Shareable badges: "I won!" leaderboards with social media integration.</p>

Table 1. Analysis of Key Persuasive Drivers and Illustrative Examples

At its core, the visual drivers employed by gambling-related social media pages operate as a multifaceted persuasion machine. It combines elements of aspiration, emotion, social bonding, cultural embedding, and behavioral psychology to create a resilient, addictive, and socially reinforced model of user engagement. These pages leverage persuasive design to transform occasional gamblers into daily users. Importantly, what appears as organic user engagement is,

in reality, the output of a finely tuned psychological control grid, engineered to bypass cognitive defenses through layered emotional conditioning.

4.2 LLMs and the rapid proliferation of AI-generated content in gambling groups

Our statistical analysis reveals a transformative shift in the gambling promotion operation following ChatGPT's introduction in November 2022. As illustrated in Figure 9, the monthly post volumes exhibit a striking exponential growth trajectory after ChatGPT's launch.

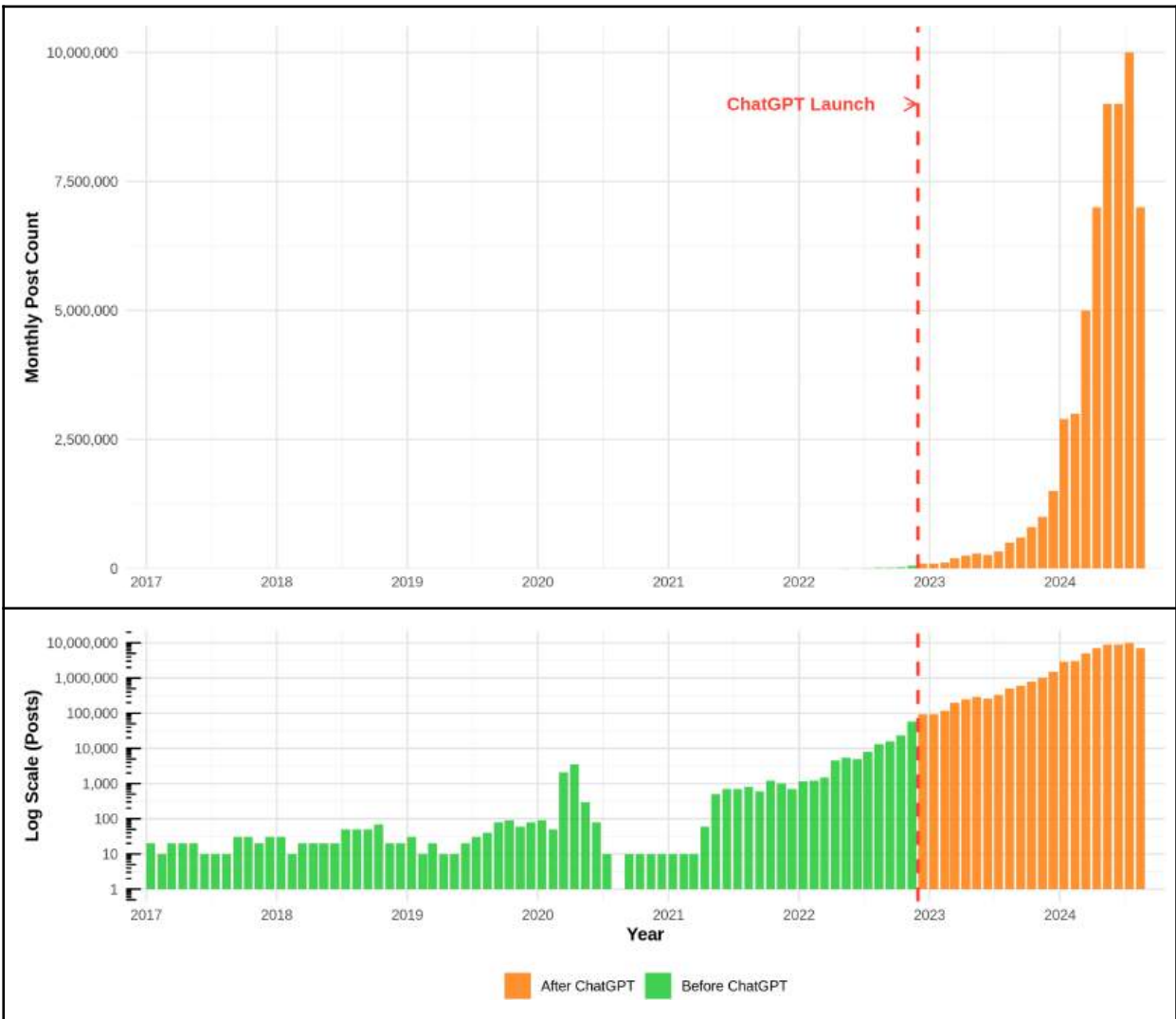


Figure 9. Evidence of increase in posts since the public launch of ChatGPT (source Meta Content Library API via Research Platform)

This visual evidence is corroborated by statistical testing, which shows mean monthly posts rising from 2,121 to 280,952 (13,242% increase) and median posts from 30 to 800,000

(2,666,566% increase). Regression analysis confirms this effect was not merely coincidental ($p < 0.0001$), demonstrating both an immediate level increase and a significant acceleration in growth trajectory. The pre-ChatGPT posting trend was essentially flat (154.9 posts per time unit, $p = 0.973$), while the post-ChatGPT slope increased tremendously (481,155 posts per time unit). While this striking temporal correlation is compelling, we should be cautious about attributing direct causality solely to ChatGPT or generative AI technologies. Other factors could have contributed to this exponential growth, including changes in Meta's platform policies, shifts in gambling marketing strategies, or other technological developments occurring during the same timeframe. Nevertheless, the timing, magnitude, and pattern of growth strongly suggest that generative AI technologies likely served as a significant enabler or accelerant for gambling promotion activities, even if not the sole causal factor.

Particularly notable in Figure 9 is the accelerating growth throughout 2023 and into 2024, culminating in monthly volumes exceeding 10 million posts. Structural break analysis detected a significant breakpoint in July 2023, suggesting a delayed, but profound impact as generative AI technologies were increasingly integrated into promotional strategies. These findings, combined with our qualitative analysis of AI-generated content, demonstrate that generative AI has not only amplified the volume of gambling promotions but fundamentally altered how this content is produced and disseminated across platforms.

While we cannot directly track how the stylistic attributes of AI-generated visuals evolved over time—due to the ephemeral and reposted nature of most content—we observe a sharp inflection in posting volume and content proliferation following the public launch of ChatGPT and, more broadly, the increasing accessibility of generative tools in early 2023. As illustrated in Figure 9, the monthly number of posts from the studied network rose from a pre-GPT average of 2,121 to peaks exceeding 10 million, with a structural break detected in July 2023. Although we cannot attribute this change solely to the use of generative AI, the scale and timing of this increase

strongly suggest that content production became easier and faster, likely enabling the adoption of synthetic media in gambling promotion strategies. Our qualitative analysis of surviving posts from this phase supports this interpretation, showing consistent aesthetic markers associated with automated image generation, albeit without a time-indexed stylistic timeline.

The remaining posts share the core drivers identified in the earlier analysis—such as aspirational wealth, urgency conditioning, gamification, and low-entry incentives—often in intensified or visually polished forms. Prominent among these are messages of “free play” bonuses paired with exaggerated visual cues like oversized buttons, bright gradients, and bold, all-caps typography. The promise of “no deposit,” “no task,” and “instant cash-out” continues to dominate the promotional language, reinforcing the illusion of effortless and risk-free participation.

What stands out more clearly in this updated corpus is the integration of visual styles that are likely the product of generative AI tools. Several images, particularly those featuring hyper-detailed environments (e.g., shark-infested slot machines, fantasy treasure hunts, stylized royalty) display a surreal, dreamlike quality characterized by exaggerated and fantastical juxtapositions of elements. A number of visual features consistently recurred across the most recent content, allowing us to formulate a plausible attribution of AI-generated origin based on stylistic and compositional patterns. These images frequently displayed hyper realistic lighting gradients, unnaturally smooth surfaces, and near-perfect symmetry—elements rarely achieved through manual production and closely resembling outputs from state-of-the-art diffusion models. Their aesthetic often combined saturated, dreamlike color schemes with densely layered compositions in which sharks, treasure chests, human figures, and jackpot cues appeared side by side in improbable arrangements. Such symbolic compression, lacking spatial coherence, has become increasingly associated with synthetic generation (Bansal et al., 2024; Smith & Hutson, 2024; Somaini, 2023). Taken together, these recurring features—coupled with the temporal

pattern of their proliferation, closely aligned with the public rollout and mass adoption of generative image platforms—support a reasonable, if not forensically verifiable, conclusion: many of the promotional visuals circulated during this period are best understood as synthetic artifacts, produced through automated content generation pipelines rather than conventional photographic or graphic design practices.

A representative example of this stylistic shift can be seen in a promotional image depicting a massive shark emerging from an underwater abyss, surrounded by poker chips and other sharks, with a slot machine placed at the center. The image advertises "\$20 FREE PLAY" with "NO TASKS" in bold, glowing type (Fig. 10). This visual narrative merges the mechanics of online slots with the visual language of fantasy gaming and high-risk adventure. Its synthetic rendering—high saturation, deep contrast, and fantastical spatial composition—corresponds to the improbable arrangements common to AI-generated images. The imagery not only exploits gamification and FOMO-inducing cues but also creates an immersive spectacle designed to heighten the emotional charge of gambling, positioning it as a thrilling quest for mythical reward. Important to note here that this image, along with its accompanying post, is the second most viewed ostensibly AI-driven image circulated by the studied groups.



Figure 10. Post shared by several groups in a coordinated manner on 6th August 2024.

Another example features polished, idealized women seated at casino tables, holding cards with confident gazes (Fig. 11a and 11b). Surrounded by soft-focus lighting and a luxurious interior, the image promotes "REDEEMABLE FREEPLAY" and "maximum cashout" with urgent messaging like "Let's start winning." Here, the visual style reflects a post-2022 generative aesthetic—characterized by flawless skin textures, cinematic lighting, and symmetrical composition—elements commonly associated with diffusion-based AI models such as Stable Diffusion and Midjourney, which became widely accessible around the same time as the public release of ChatGPT. While ChatGPT itself is a text-based model, its launch contributed to the broader cultural shift and infrastructural expansion that facilitated the mainstream adoption of generative tools, including those for image production. The convergence of these technologies arguably enabled a new ecosystem of content creation, in which synthetic visual styles became a prominent feature of gambling-related promotional imagery. The image is reflective of multiple persuasion strategies/drivers simultaneously: aspirational wealth, social desirability, manufactured trust via financial terminology, and hyper-masculine fantasies through the figure's overall demeanor. The promotional promise of low-barrier entry reinforces habitual

engagement, while the glamorized aesthetic positions gambling as a means to gain wealth and social status. Posts with these images were shared across several fan groups under observation, with many achieving significant engagement. The first variant (Fig. 11a) garnered 4.3M views, 160 reactions, 1.1K comments, and 1K shares when posted by "Slots Online" on April 19, 2024. The second variant (Fig. 11b) received 3.3M views, 596 reactions, 3.3K comments, and 1.5K shares when posted by "Lucky Game 777" on May 20, 2024. The overall visualization count for these particular images is in several millions, when one takes into consideration the number of times the posts were shared by different groups of the gambling network.



Figure 11. Most viewed ostensibly AI-generated posts in the network.

These examples point toward an emerging hybrid persuasion strategy: one that fuses previously dominant attention drivers with generative aesthetics to heighten engagement and create a more immersive experience. While human figures—particularly sexualized or influencer-like subjects—continue to appear in select materials, their symbolic function is increasingly paralleled by animated mascots, cartoon avatars, and stylized AI-generated characters. Some of these personas retain emotional appeal, while others intensify immersion through spectacle. In

short, the updated visual grammar retains the behavioral hooks of earlier content while experimenting with enhanced visual saturation and narrative density, likely enabled by the expanding accessibility and affordances of AI image-generation tools.

5. Discussion

The analysis presented in this chapter reveals how the visual ecosystem of online gambling promotion on Facebook functions as a multi-layered architecture of persuasion. This ecosystem mobilizes a combination of well-established attention drivers—such as aspirational wealth, gamification, and urgency conditioning—and integrates them with emerging aesthetics and scale made possible by generative AI technologies. This hybridization marks a shift not only in style but in the strategic infrastructure of gambling marketing: from emotional instigation to immersive, semiotic engineering.

Our findings substantiate and extend the existing literature on digital gambling marketing strategies. The use of hyper-masculine fantasies, performative financial trust signals, FOMO tactics, and gamified interfaces aligns with prior research on how online gambling operators construct affective and behavioral pathways to sustain user engagement (Gainsbury et al., 2015; Guillou-Landreat et al., 2021; Lopez-Gonzalez et al., 2018). The prominence of aspirational wealth imagery directly confirms Deans et al.'s (2016) observation that gambling is frequently presented as a glamorous and effortless activity.

However, our visual analysis reveals a more sophisticated application of these principles. Rather than simply portraying gambling as glamorous, the coordinated networks create complete aspirational ecosystems where gambling is positioned as the gateway to an idealized lifestyle. The manufactured trust mechanisms we identified—particularly strategic use of payment receipts—extend Gainsbury's and colleagues' (2015) work on how social media platforms foster online communities and strengthen brand loyalty.

In particular, our typology of visual drivers demonstrates that these strategies are not isolated

but systematically paired within combinations of denotative and connotative clusters, reinforcing each other and producing what could be described as synergistic instigation tactics. For example, aspirational imagery frequently co-occurs with transaction screenshots and reward interfaces, creating a recursive loop of desire, validation, and behavioral activation. This interweaving suggests a more sophisticated understanding on the part of platform administrators regarding how to engineer emotional immersion and habitual interaction through visual storytelling. We identified additional dimensions specifically adapted for social media contexts, including enhanced aesthetic gamification, narrative-driven gamification, and social-competitive gamification.

Content generated by generative AI tools does not replace previous persuasive elements—it enhances and recombines them in more emotionally potent and cognitively captivating ways, while enabling an unprecedented scale of deployment. By generating hyper-real, surrealistic, or fantastical environments, generative AI extends the semiotic repertoire available to gambling promoters. It allows for the construction of imaginative universes where reward systems are not only emotionally appealing but symbolically elevated. Moreover, AI-generated characters, mascots, and avatars can now serve as emotionally resonant figures in place of influencers or human models. They retain the capacity to simulate intimacy, playfulness, or authority, but without the regulatory mechanisms attached to promoting posts with images of real personalities. This marks a strategic move towards greater use of synthetic figures, potentially circumventing existing guidelines on celebrity endorsements or influencer accountability.

The strategic deployment of generative AI imagery raises pressing concerns for both consumer protection and regulatory frameworks. AI-generated content is not merely novel; it is often designed to evade traditional detection systems, whether human or algorithmic. Its surreal quality makes it harder to classify, while its synthetic nature complicates attribution and accountability. Furthermore, the staggering increase in mean and median monthly posts demonstrates how generative AI has transformed this gambling promotion operation from a

modest activity to an industrial-scale operation. This explosive growth, culminating in volumes exceeding 10 million monthly posts by 2024, represents a fundamental shift in the information ecosystem surrounding online gambling. The rapid acceleration in the volume of posts raises concerns about platform governance and the limitations of existing transparency tools. Meta Content Library's graphical user interface only permits data collection from popular accounts, significantly restricting comprehensive analysis. While downloading these posts and their multimedia content was instrumental for our methodology, more extensive analysis was constrained by practical limitations. Although the API environment hosted at Somar - University of Michigan theoretically enables broader content access, the absence of integrated large language model capabilities and the cumbersome procedures required to use the virtual data enclave prevented us from expanding our analysis to the full dataset.

From a policy standpoint, this suggests an urgent need to redefine what constitutes manipulative content, especially in the context of vulnerable users such as youth (Biggar et al., 2023), problem gamblers (Gainsbury et al., 2016), or populations targeted through cultural and linguistic localization. The opacity of AI-generated visuals—both in terms of provenance and intent—introduces what we may call epistemic opacity in the advertising landscape. Users can no longer easily distinguish between organic content, paid promotions, and synthetic manipulations, blurring the thresholds of informed consent and autonomous decision-making.

Additionally, the use of emotional narratives and cultural symbols in AI-generated campaigns—especially in contexts such as the Urdu-language cluster—raises ethical questions about algorithmically optimized exploitation of moral and cultural sensibilities. When gambling is embedded in narratives of victimhood, family breakdown, or economic hardship, the promotional message is no longer just persuasive—it becomes ideologically manipulative.

From a methodological standpoint, this study proposes a hybrid pipeline capable of scaling qualitative analysis across large image datasets. By combining denotative and connotative embeddings, dimensionality reduction, and density-based clustering, we operationalize an

approach to detect and create typologies of visual persuasion in a way that is both computationally rigorous and interpretively rich. It is important to acknowledge that our approach has inherent limitations in terms of representativeness. The network analyzed represents a specific subset of gambling promotion activities on Facebook and may not be representative of all such activities on the platform. Our discovery method relies on coordination patterns identified through the Vera AI alerts system, which means we may have missed gambling promotion networks that use different coordination tactics or operate below detection thresholds. Additionally, the discovery process was dependent on CrowdTangle, a tool that was deprecated during our study period, potentially limiting our ability to identify new networks or track evolutionary changes in existing ones on Meta platforms. Since the Meta Content Library (MCL) API was launched, we investigated it as a possible alternative. At the time of writing, three limitations prevented us from fully porting our workflow to this environment: the internal MCL ID system is distinct from the one used on Meta platforms, and the clear room environment has restrictions on both task scheduling and data sharing.

The use of large language models (LLMs) in this study also presents a methodological duality worth noting. On one hand, LLMs allowed us to scale qualitative analysis by generating denotative and connotative image descriptions, which we then clustered and manually coded. This approach offered an efficient and interpretable way to surface visual themes at scale. On the other hand, these same models—when used to generate persuasive visual content—are implicated in the amplification of synthetic persuasion. We thus find ourselves using the very tools under critique. This reflexive position demands an awareness of how LLMs may encode biases, omit culturally specific meanings, or flatten nuance during interpretation. While we attempted to mitigate these effects by manually reviewing a portion of cluster outputs and using a collaborative coding process (see Appendix for the prompts used), future work must continue to critically assess the framing effects and normative assumptions embedded in AI-assisted analysis.

6. Future directions

Several key directions for future research emerge from our findings. First, while this chapter has documented the prevalence and visual sophistication of AI-generated gambling promotions, it has not measured their *efficacy* in terms of user behavior. Do synthetic visuals lead to higher engagement, clickthroughs, or gambling frequency compared to human-generated content? Answering this question will require experimental designs such as A/B testing, eye-tracking, or psychological surveys comparing user responses to synthetic versus conventional imagery. Such studies would provide urgently needed insight into whether AI-generated content is simply more prolific—or more persuasive.

Second, future work should investigate the algorithmic infrastructures that govern visibility and reach. How do recommendation systems interact with generative content? Are AI-generated gambling posts more likely to be algorithmically amplified? Longitudinal analysis of platform data, ideally with privileged access to backend recommendation logs, could clarify the role of algorithmic curation in the spread of synthetic gambling promotions.

Another critical avenue for future research lies in the domain of platform governance, especially in examining how algorithmic systems—not merely human decisions—shape the visibility and virality of gambling-related content. As our analysis has shown, Meta's regulatory asymmetry between paid advertising and organic content (which, in fact, only seems organic) creates a structural loophole whereby harmful promotional material can proliferate with minimal oversight. This asymmetry is further compounded by what Laufer & Nissenbaum (2023) describe as *algorithmic amplification*: the automated, rule-based processes that determine which content is surfaced, suppressed, or propelled across a platform's user base. Importantly, amplification in this context is not a neutral technical function—it acts as a systemic force

capable of displacing traditional mechanisms of social trust and editorial gatekeeping.

This calls for a shift in regulatory focus: rather than concentrating exclusively on moderating “problematic content” after it has appeared, platforms and regulators must interrogate the amplification infrastructures that invisibly prioritize certain types of content—such as visually immersive, AI-generated gambling promotions—while sidelining others. Algorithmic amplification becomes especially problematic when it is mismatched to the platform's stated goals (e.g., user safety or wellbeing) or when it eclipses previously existing, socially embedded forms of information curation and trust-building. In this light, content moderation alone is an insufficient remedy; what is needed is a deeper audit of the amplificatory logic embedded in recommendation systems. Interdisciplinary research efforts should therefore consider how amplification algorithms not only enable but structurally entrench exploitative persuasion architectures in digital environments—and what kinds of accountability mechanisms might address this systemic displacement.

Finally, future interdisciplinary work should investigate further the dual-use nature of generative technologies. As this chapter shows, LLMs and generative image tools can serve both analytical and manipulative functions. Their deployment in social research must be matched with a reflexive awareness of their limitations, assumptions, and social impact. Transparency in model use, clear documentation of interpretive frameworks (such as the prompts provided in Appendix A), and continual engagement with ethical debates around AI are essential components of responsible scholarship in this domain.

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Appendix

Prompts used for generating connotative and denotative descriptions

Item	Definition and examples	Visual example
Prompt for connotative image description	<p>Description: “Describe the connotative meaning of this image. Avoid phrases like 'the image conveys' or 'the image portrays'. Start the description without any introductory phrases. YOU MUST enclose the description within <desc> and </desc> tags.”</p> <p>Example of response: “A vibrant and enticing atmosphere of excitement and opportunity, with elements of chance and luck. The use of bright red and gold colors suggests energy, passion, and a sense of urgency. The presence of playing cards, dice, and a roulette wheel evokes the thrill of gambling and the allure of potential winnings. Phrases like ""24/7 OPEN"" and ""100% LEGIT"" imply accessibility and trustworthiness, while ""5\$ POINTS FREEPLAY"" suggests an enticing offer or promotion, encouraging participation and engagement.”</p>	

Prompt for denotative image description

Description: “Describe the denotative meaning of this image. Avoid phrases like 'the image conveys' or 'the image portrays'. Start the description without any introductory phrases. YOU MUST enclose the description within <desc> and </desc> tags.”

Example of response: “A promotional image for "Frances Gaming" featuring a roulette wheel, playing cards with aces, and red dice. The background is red with star and light effects. Text includes "24/7 OPEN," "100% LEGIT," and "5\$ POINTS FREEPLAY." Additional text lists names like "ORIONSTAR," "JUWA," "MILKY WAY," "GAME VAULT," "CASINOWONDERLAND," "FIREKRINE," "RIVERSWEEP," "DOUBLE UP," and "ANDMANYMORE.””

