



THE SPECTACLE OF SPENDING Influencers as Identity Mediators in Gacha Games

SERGIO GUTIÉRREZ-MANJÓN ¹

sergiogu@ucm.es

SALVADOR GÓMEZ-GARCÍA ¹

salvgome@ucm.es

GEMA BONALES-DAIMIEL ¹

gbonales@ucm.es

NOELIA MORÁN ¹

nmoran@ucm.es

¹Complutense University of Madrid, Spain

KEYWORDS

*Streaming
Gacha
Persuasive
Communication
Dark Patterns
Gambling
Digital Identity
Social Media*

ABSTRACT

This study analyses the visual mediatisation of gacha mechanics on Twitch and its impact on digital identity. Using a mixed-methods approach, 16 hours of streaming footage and 42,000 messages from four top-grossing video games were examined. The results reveal a visual architecture that nullifies the surrounding environment and focuses attention on chance-based mechanics. The study concludes that audience size shapes the normalisation of spending: macro-communities legitimise it through status and irony, whereas micro-communities do so through intimacy and shared victimhood.

Received: 17/ 03 / 2026

Accepted: 20/ 05 /2026

1. Introduction

The consolidation of the Internet has not only broadened access to audiovisual content, but has also redefined users' relationship with formats such as video games, incorporating new logics of interaction and circulation (Francisco & Rodríguez, 2020). In this context, Generation Z understands leisure as an active practice, participating in the creation of virtual spaces and new socialisation networks (Llopis-Amorós, 2019). Hence, the "participatory culture" (Jenkins et al., 2015) operates as a major driving force within this ecosystem, in which users no longer merely seek content, but also produce their own and interact in communities based on shared interests (Mut, 2022).

Within this context, live content broadcasting (*streaming*) has grown exponentially, positioning Twitch.tv as the leading platform among audiences aged between 16 and 24, whose average use has already reached one hour per day (IAB, 2025). Twitch's architecture is based on constant, real-time dialogue between the content creator (*streamer*) and their audience. This gives rise to horizontal communication (Gutiérrez-Manjón et al., 2022), fostering communities in which viewers develop a strong sense of belonging (Ros & Gutiérrez-Manjón, 2022). In this regard, research focusing on Twitch and Generation Z highlights that these platforms not only consolidate new patterns of media consumption among young people, but also transform this audience's relationship with audiovisual products by introducing community-based and participatory dynamics that reconfigure the viewing experience. It is precisely this proximity, inherent in live streaming, that enables lasting bonds and relationships to develop between creators and their followers (García Rivero et al., 2022).

In this role, *streamers* operate as key opinion leaders and highly influential actors in electronic word of mouth (eWOM). Audiences not only consume their content for entertainment, but also perceive them as authorities in terms of their knowledge of the game (King & De la Hera, 2020). Through repeated viewing, spectators engage in observational learning: this is where they learn how to play, discover new games and, in particular, observe the *streamer* enjoying and evaluating the content (Lee et al., 2025). During broadcasts, *streamers* constantly assess the game, and their positive or negative eWOM reinforces the audience's inclination to emulate them. This status allows them to act as endorsers of virtual products. By displaying items, they shape perceptions of their value, either by highlighting the rewards they offer or by creating an environment in which they confer social status (King & De la Hera, 2020). As viewers become inspired and feel closer to the *streamer*, they ultimately attribute significant value to the objects that the creator uses or promotes.

It is within this community-based ecosystem that the video game industry has evolved from a niche market into one generating USD 189 billion (Newzoo, 2025), deploying strategies with real-world impact in a mobile segment —responsible for USD 103 billion— based on models such as *Game as a Service* (GaaS). This model prioritises continuous monetisation over one-off purchases, extending the product's commercial life cycle through constant updates and new revenue mechanisms (Lehtonen et al., 2022).

The GaaS model has normalised strategies such as *free-to-play* (F2P) and microtransactions (Kaleva, 2022). However, these strategies have been criticised for encouraging practices of "predatory monetisation" (Davidovici-Nora, 2014). Mechanisms such as loot boxes, in which content is randomised and revealed following payment (Ivanov et al., 2021), have generated considerable concern. Academic literature has pointed out that these mechanics resemble the psychological mechanisms of gambling (Hidalgo, 2019; Zendle & Cairns, 2018). Such mechanics are implemented through dark patterns: audiovisual content created and operating according to an algorithmic logic designed to seduce users and reconfigure their perception of risk, persuading them to take actions that may run counter to their own interests (Zagal et al., 2013).

The impact of these digital worlds extends beyond technical interaction to the reconfiguration of the visual ecosystem. *Streaming* on Twitch provides the setting in which the *gacha* game is mediated and endowed with a specific visual performativity before an audience. Content creators do not merely play; they manage the representation of digital identity in relation to chance: they justify spending, stage their response to rewards and ritualise the act of "pulling" (gambling within the video game), constructing a digital self under the constant gaze of their community.

Although previous research has addressed the use of dark patterns (Zagal et al., 2013) and, separately, the formation of communities on Twitch (Ros & Gutiérrez-Manjón, 2022), there remains a significant gap regarding how *streamer* mediation and audience scale influence the perception and normalisation of these monetisation mechanics. This article addresses this gap by analysing the

behavioural patterns that occur in streams of four of the highest-grossing *gacha* games in 2025. It does so through a comparative analysis of eight streams (16 hours of footage and 42,000 messages in total) by Spanish-speaking *streamers* with different audience sizes (approximately 5,000, 1,000 and fewer than 100 viewers per stream). This sample seeks to answer the following research questions:

1. What persuasive communication strategies and behavioural patterns do *streamers* employ to mediate the use of *gacha* mechanics for their audiences?
2. How does audience size shape the communicative effectiveness of the *streamer* when representing randomised monetisation mechanics?
3. How does collective interaction within Twitch's visual ecosystem contribute to the validation of chance algorithms as mechanisms that shape desire and the digital self?

To explore these questions in greater depth, the main objective of the research is to analyse the visual mediatisation of *gacha* mechanics on Twitch in order to determine how the *streamer* and audience scale influence the digital subject. To this end, the following specific objectives are established:

1. To categorise the rituals and forms of staging that *streamers* use to represent success or failure when playing video games involving random rewards.
2. To compare the logics of identity representation between large-scale channels and micro-communities in order to identify differences in the normalisation of spending.

2. Theoretical Framework

The study of *gacha* video games and their live streaming has moved beyond viewing *software* as a functional tool to understand it instead as a reconfiguring visual ecosystem. Within this space, the *streaming* image does not merely represent the video game being broadcast, but acts upon the individual, shaping their desire and digital identity (Cristancho et al., 2023). This theoretical framework proposes a progression from the visual dimension of the internal structure of the *gacha* —the game's predatory interface— to the affective and identity-based dimension of the screen, where subjects construct and present themselves before an audience.

This proposal rests on two pillars. First, it examines the visual architecture of randomness, in which design is structured around an affective dimension that operates as a device for capturing the user's attention. Second, it explores the performativity of the digital self on the Twitch stage, examining how the visual dimension of the *streamer's* image and the scale of their community transform consumption into a ritual that defines users' identities within the virtual community.

2.1. Aesthetics of Desire and Visual Architectures of Randomness

Within the visual *gacha* ecosystem, images capture attention through high fidelity and animations that define the affective dimension by mediating the digital self (Woods, 2024). These architectures intertwine immediate visual gratification with personal identity. In this way, dark patterns operate as interfaces designed to seduce viewers through chromatic and rhythmic stimuli that transform the uncertainty of chance into an aesthetic spectacle.

The effectiveness of this engagement lies in a hyper-aesthetic of scarcity linked to chance-based mechanics (Mejías et al., 2024). In these environments, ownership of rare items confers symbolic status that shapes the identity dimension, turning appearance into a currency of power. Thus, the desired character functions as an avatar of success that subjects incorporate into their digital identity in order to gain recognition within the video game's social ecosystem.

This dynamic underpins an algorithmic management of desire that exploits the affective dimension. The chance system and pity —a guaranteed reward— operate as a visual architecture of expectation optimised to guide users through cycles of frustration and gratification (Chen & Fang, 2023). This randomness has been associated with gambling problems (Han, 2025; Kamamura et al., 2022), as it follows variable-ratio schedules in which random reinforcement encourages engagement and prevents behavioural extinction (Drummond & Sauer, 2018). Likewise, guaranteed rewards sustain behaviour by obscuring awareness of previous losses (King & Delfabbro, 2018), fostering cognitive distortions and an illusion of control that encourage continued spending (Brooks & Clark, 2019).

Spending is therefore understood as a necessary investment towards an aesthetic objective that requires strategic planning. The experience entails managing effort and money under the promise of a

perpetually deferred future benefit (Woods, 2022). This logic of future value subjects individuals to a discipline of persistent consumption linked to an ideal of collection that the system never allows them to complete.

Thus, the graphical interface of these video games acts as a mediator that reconfigures the player as a visual subject subordinated to the reward displayed on the screen. By ritualising the act of pulling through orchestrated flashes and sounds, the spectacle of the commodity emerges in its purest form (Debord, 2000): a social relationship mediated by images of algorithmic success. Individuals no longer inhabit the game, but rather the image of the game, with their affectivity and agency anchored to a visual architecture designed for continuous monetisation.

2.2. Performativity of the Digital Self and the Visual Construction of Community

By transferring the game to the Twitch environment, the consumption of the image shifts towards a performativity of identity in which the broadcaster constructs their digital self through constant interaction with their audience. In this scenario, the *streamer's* visual presence—through the *webcam* and their gestures—acts as a set of parasocial cues that sustain the affective dimension and facilitate emotional connection (Leith, 2021). This dynamic gives rise to a unique bond where, unlike in traditional media, there is a reciprocity mediated by the chat function that reinforces the perception of closeness and authenticity (Kowert & Daniel, 2021).

The bond between the creator and their community is not merely informative; rather, it responds to a need for social interaction and shared entertainment that nurtures a sense of identity beyond the screen (Speed et al., 2023). Watching someone stream live content creates a collective viewing experience (Gutiérrez-Manjón et al., 2022) in which the viewer becomes emotionally invested in the other person's success or failure whilst watching them play. This connection is strengthened through what are known as interaction rituals (Jodén & Strandell, 2021), that is, shared practices such as celebrations following a reward or the expressive codes of the chat itself — such as *emotes* — which create a mutual focus of attention and a shared sense of connection. It is these rituals that enable followers to develop a strong sense of belonging, using the livestream as a space to alleviate unwanted loneliness and boredom (Ros & Gutiérrez-Manjón, 2022).

However, the configuration of this digital self and the depth of the emotional bond are conditioned by the scale of the visual ecosystem (Hilvert-Bruce et al., 2018). On smaller channels, the ritual is highly personalised and the creator's identity is built upon a mirror-like and intimate image, where the user's individual recognition reinforces group cohesion. Conversely, with large audiences, the broadcaster is transformed into an entertainment figurehead, an icon where rituals become mass phenomena and the sense of belonging arises from immersion in a professionalised visual crowd (Jodén & Strandell, 2021; Wulf et al., 2021). In this way, the size of the audience reshapes the individual's digital identity: from a vulnerable subject seeking human connection on a small-scale channel, to a media icon leading a mass ecosystem governed by the logic of spectacle and consumption.

3. Methodology

This research employs a mixed-methods approach tailored to the research objectives and questions through qualitative-quantitative triangulation. This design traces the construction of identity, the creator's staging and the emotional response of their community by combining content analysis, virtual ethnography and automated sentiment analysis.

3.1. Research Design and Sample Rationale

The study analyses the parasocial bonds and horizontal communities that emerge within the Twitch platform ecosystem. To this end, non-probability convenience sampling was used to select four video games featuring *gacha* mechanics on the basis of two reference criteria:

- Economic dominance: the selected video games rank among the ten highest-grossing games worldwide from July to September 2025: *Pokémon TCG Pocket* (USD

118,000,000), *Genshin Impact* (USD 113,975,000), *Wuthering Waves* (USD 53,650,000) and *Umamusume: Pretty Derby* (USD 85,920,000), as shown in Table 1.

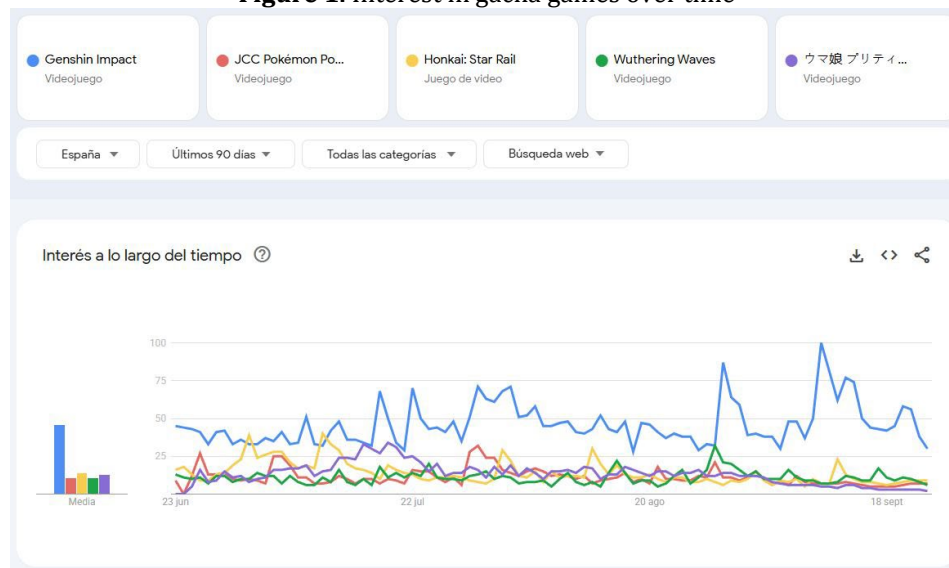
Table 1. Revenue levels of gacha games in 2025

Video games	Annual revenue	Q3 revenue
Love and Deepspace	\$711,800,000	\$170,700,000
Pokémon TCG Pocket	\$668,795,000	\$118,000,000
Honkai: Star Rail	\$588,260,000	\$161,910,000
Genshin Impact	\$472,342,500	\$113,975,000
Fate/Grand Order	\$322,615,000	\$113,615,000
Wuthering Waves	\$263,550,000	\$53,650,000
Uma Musume: Pretty Derby	\$244,385,000	\$85,920,000
Zenless Zone Zero	\$232,245,000	\$49,775,000
Monster Strike	\$210,525,000	\$56,300,000
Dragon Ball Z Dokkan Battle	\$203,400,000	\$65,000,000

Source: Authors' own elaboration based on data provided by Gacha Revenue, 2025

- **Social interest and timing:** The analysis was conducted between July and August 2025, taking advantage of the summer period, when audiences have more free time to consume live content. From the ten highest-grossing video games, those generating the greatest interest within the Spanish-speaking community were selected. According to Google Trends data (Figure 1), search peaks were dominated by *Genshin Impact*, alongside a notable increase in interest in *Pokémon TCG Pocket* and *Wuthering Waves* in June and July, respectively, following the release of new updates for both video games. Interest in *Umamusume: Pretty Derby* also increased following its launch in Western markets.

Figure 1. Interest in gacha games over time



Source: Google Trends, 2025.

The analytical corpus comprises 16 hours of footage and 42,000 messages obtained from eight public Twitch streams (two for each video game) featuring four Spanish-speaking *streamers* (S1, S2, S3 and S4). These creators have distinct content profiles: S1 is a generalist *streamer* who occasionally plays *gacha* games; S2 specialises in various *gacha* titles and provides technical guides; S3 focuses exclusively on *Pokémon TCG Pocket*; and S4 creates content on a range of video games, including *gacha* titles. The sample is structured as a comparative matrix cross-referencing the four most popular *gacha* games in Spain and Latin America during the third quarter of 2025 (Q3: July–September) (Figure 1) with the *streamers* according to audience size, based on TwitchTracker data: macro-*streamers* ($\approx 5,000$ viewers), medium-sized *streamers* ($\approx 1,000$) and micro-*streamers* (< 100), as shown in Table 2.

Table 2. Distribution of the sample by video game and *streamer*

Video Games	Streaming 1	Streaming 2
Genshin Impact	S2 (medium-seized)	S4 (micro)
Pokémon TCG Pocket	S1 (macro)	S3 (micro)
Umamusume: Pretty Derby	S1 (macro)	S4 (micro)
Wuthering Waves	S1 (macro)	S2 (medium-seized)

Source: Authors' own elaboration, 2026.

This research applied temporal and thematic criteria to the selection of the audiovisual material. The first stream produced by each *streamer* featuring one of the selected video games during the study period was chosen. A requirement was established that each stream exceed two uninterrupted hours in duration in order to ensure the neutrality of the sample and avoid selection bias towards streams featuring extraordinary content or atypical peaks in spending.

3.2. Analysis Procedure and Data Processing

Social interaction in the chat was processed using an extraction, transformation and loading (ETL) protocol:

- Extraction: *TwitchDownloader* was used to obtain the complete messages from the 16 hours of streaming (date/time, user and comment).
- Transformation: the data were normalised into CSV files, removing messages from automated *bots* and assigning a temporal ID to each contribution.
- Loading and sentiment analysis: Gemini 3 Pro was used to score the sentiment of each message on a scale from 1 to 10, as several studies indicate that this artificial intelligence system provides valid predictions of user sentiment in more ambiguous scenarios (Buscemi & Proverbio, 2024; Chaudhary, 2024).
- A temperature of 0.5 was configured to ensure consistency in the detection of emotional tone and conversational polarity.

3.3. Analytical Instruments

To conduct the analysis, an analytical matrix was designed linking each theoretical dimension to a specific technique, thereby enabling comparison of both the *streamer's* style and the influence of each video game's visual architecture:

1. Visual dimension: this is addressed through visual content analysis and non-participant observation of the video footage. The approach focuses on image architecture and the *streamer's* physical interaction with the interface. It examines how the game interface and the creator's staging (e.g. webcam position, gestures and the configuration of streaming scenes, known as *overlays*) act as elements for retaining viewers' attention (Robinson, 2018). This dimension makes it possible to observe whether higher-revenue video games employ more sophisticated visual rituals than more niche titles.
2. Affective dimension: this is examined through a paralinguistic analysis of the *streamer* combined with natural language processing (NLP) of the *chat* (Ma et al., 2024). This approach measures the sentiment generated during the stream. The broadcaster's tone of voice and the ritualisation of "pulling" are triangulated with the *chat's* sentiment scores. The aim is to determine whether the *streamer's* communication strategies generate effective and synchronous emotional validation among the audience.
3. Identity dimension: this is investigated using virtual ethnography and discourse analysis, focusing on the construction of the digital self and the strength of the parasocial bond (Wulf et al., 2021). The use of terms expressing belonging and the roles assumed by the creator, whether as an expert in the video game or as a victim of luck, are recorded. This technique makes it possible to determine how the community normalises spending according to the social status projected by the *streamer*.

This methodological structure ensures a two-way comparison whereby, on the one hand, the impact of audience scale (macro vs. micro) on how the *streamer* influences their audience is observed and, on

the other, the influence of the visual architecture of *gacha* video games on the *streamer's* spending behaviour can be measured.

4. Results

The four selected titles share *gacha* architecture as a central mechanism of monetisation and retention. However, each presents technical and expressive nuances that define its respective community and justify individual analysis. This approach makes it possible to document how the same chance-based mechanic translates into different interaction dynamics depending on the video game, its sensory design and the *streamer's* specialisation. The breakdown by dimensions (visual, affective and identity-based) therefore illustrates the types of responses elicited by different reward stimuli, as well as the evolution of participants' roles and the development of a distinctive language between the creator and their audience.

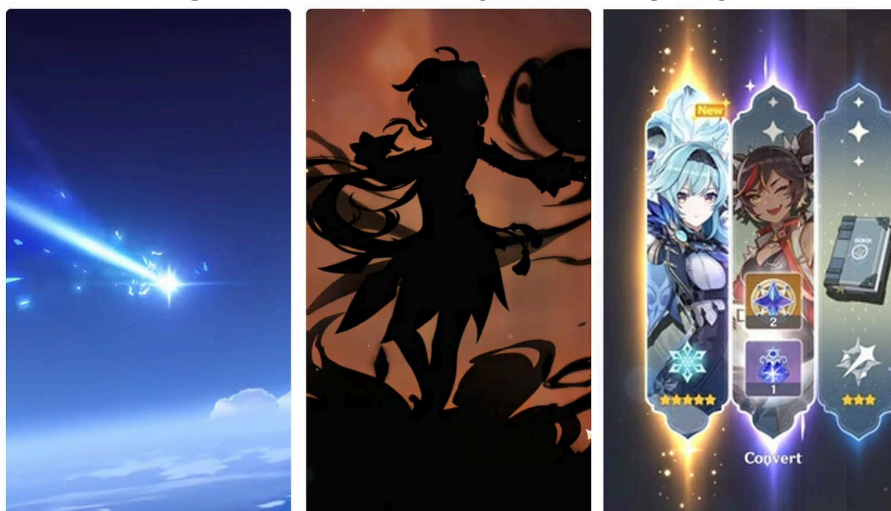
4.1. Genshin Impact

A multiplatform open-world adventure and fantasy video game in which players use a main virtual currency known as "Primogems" to acquire exclusive characters and weapons through chance-based mechanics known as "Wishes". The experience involves exploring the vast continent of Teyvat and assembling strategic teams to fight and solve mysteries (Hoyoverse, 2025).

In the visual dimension, S2 prioritises bodily presence: the *webcam* remains visible and stable, allowing facial expressions and hand gestures to accompany the *gameplay* without altering the scene. By contrast, S4 disrupts this centrality by using an animated digital avatar that occupies the foreground and relegates the game to a secondary window, alternating framing to emphasise the *chat* and donations. Both creators commercially incorporate their sponsor, *Lootbar.gg*, through *bots* that automate affiliate links in order to monetise purchases of virtual currency. Audience retention relies on the visual architecture of *Genshin Impact*, as its *gacha* interface suppresses the exploration environment to focus attention on high-quality illustrations.

Retention, both for the game itself and for the content creators, is supported by the visual design used when invoking "Wishes" through a cinematic sequence, the climax of which is a shooting star that emits a golden flash accompanied by sound effects signalling the acquisition of higher-value rewards (Figure 2). These indicators trigger synchronous euphoria among the creator and their *chat*. In this way, the design emphasises the exclusivity of the desired item in relation to *pity* (the guarantee system) and encourages repetition of the spending cycle by transforming the reward into an emotionally validated episode through positive reinforcement from the community.

Figure 2. Screenshots of *in-game* reward openings



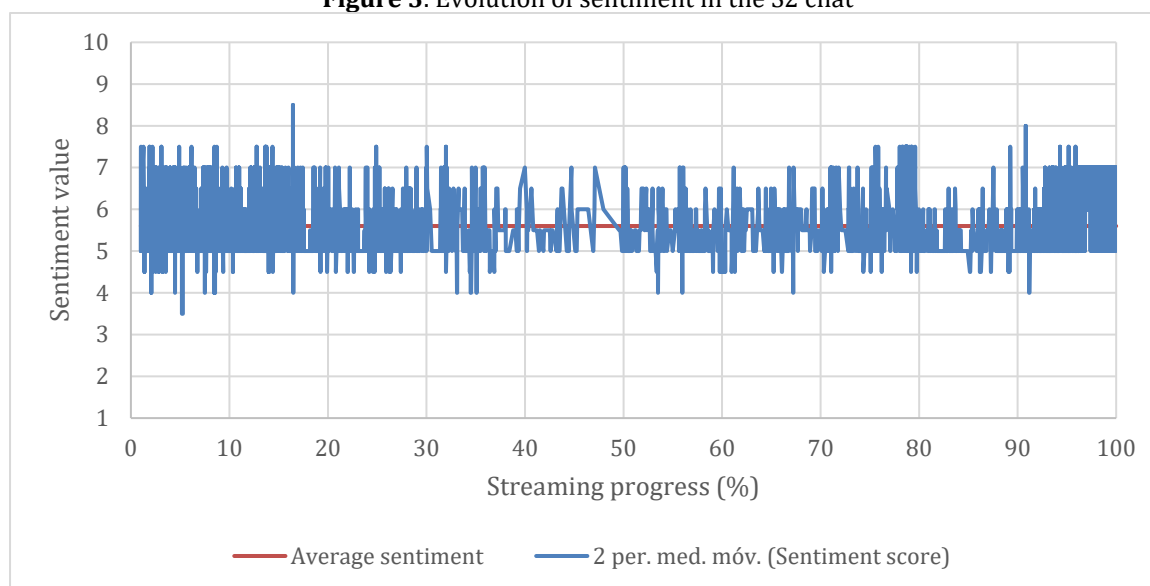
Source: Genshin Impact.

In the affective dimension, the sentiment analysis graphs for the *chats*, in both Figure 3 and Figure 4, confirm that positive peaks occur synchronously with the ritualisation of successful *gacha* pulls, whereas negative peaks arise when the creator fails a pull through bad luck. For S2, the positive peak

emerges from a dialectical tension in which the *streamer* states that they will not spend any more, while the *chat* acts as a catalyst through messages such as "pull it and extra content for the video" or "pull more, don't be afraid". This social pressure overcomes S2's resistance, whose shouting is followed by a flood of channel-specific *emotes* such as "putustonks", symbolising the excitement of gambling. Furthermore, when the *streamer* obtains the desired item, they shout phrases such as "Thank you, Hoyoverse!", referring to the game's developers. By contrast, S4 manages affectivity through vulnerability: the *streamer* plays sad music while talking to her friends, who comment that "there go the savings", reinforcing her role as a victim of chance when she fails to obtain the desired character. At certain points, she also asks users to subscribe or donate so that she can continue playing, to which some respond with messages such as "I love you, but my love is poor".

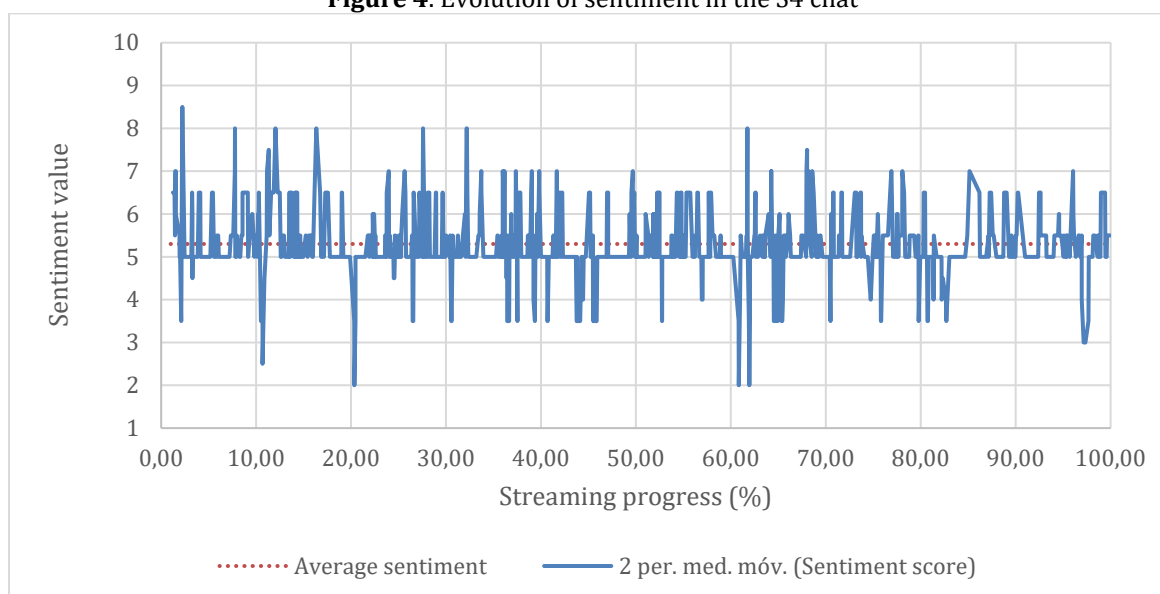
In both cases, negative sentiment is channelled as a shared loss through messages such as "F", referring to a failed pull, and through terms used to describe bad luck such as "mufada" or "estar salado", demonstrating collective acceptance of the rules of chance. The cycle is completed with the appearance of the *bot*, which invites users to visit *Lootbar.gg*, where virtual currency can be obtained more cheaply, thereby transforming the emotional climax into a normalised consumption ritual.

Figure 3. Evolution of sentiment in the S2 chat



Source: Authors' own elaboration, 2026.

Figure 4. Evolution of sentiment in the S4 chat



Source: Authors' own elaboration, 2026.

In the identity dimension, consumption is normalised through markers of belonging and inclusive pronouns that construct a collective digital self. In S2's *chat*, the use of "we" is recurrent when discussing whether compensation is deserved or celebrating victories, positioning the creator as an expert reference point for the community. By contrast, S4 assumes a role closer to that of a fellow player who seeks comfort from followers when pulls fail, thereby reinforcing a parasocial friendship bond. Beyond *emotes* and expressive codes, both communities engage in discussions concerning spending strategies and the usefulness of characters or items. This technical exchange is particularly dense in S2's *chat*, consistent with the creator's profile as a producer of specialised guides on YouTube. Overall, spending virtual currency (Primogems) becomes a status marker: it allows users to remain "up to date" and participate in the collective ritual of the stream.

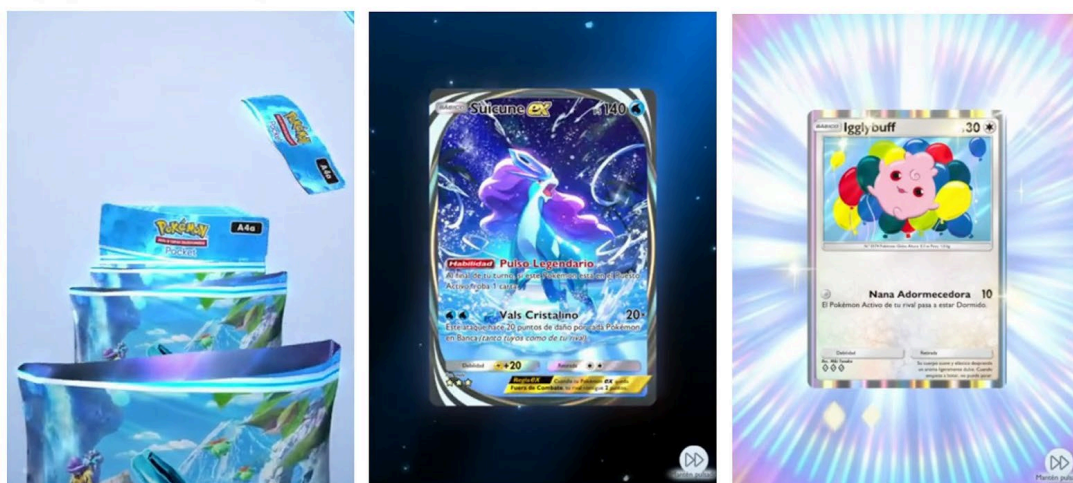
4.2. Pokémon TCG Pocket

A mobile video game centred on collecting digital cards. Its system uses "Poké Gold" as virtual currency to acquire resources or accelerate the opening of card packs. The experience combines collecting, strategy and strategic battles against other players (TCG Pocket, 2025).

In the visual dimension, S1 and S3 prioritise human presence, highlighting their faces and hands to emphasise the physical and symbolic component of collecting. The camera is statically integrated into one side of the screen without obscuring the game menus. However, the staging differs according to the scale and production resources associated with each channel. On the one hand, S1 creates greater dynamism through a higher level of production: a themed frame, alternative *overlays*, animated backgrounds and customised illustrations. On the other hand, S3 uses a more austere fixed composition, without graphical intervention over the game image.

In both cases, viewer retention depends on the visual architecture of the video game itself. In this respect, the interface removes all distractions to focus attention on the tactile gesture of tearing open the pack. The sensory climax is marked by golden flashes or bright white borders which, together with a high-pitched electronic chime (Figure 5), trigger euphoria among the creator and their community when exclusive cards are obtained. This design reinforces the value of extremely rare items, such as immersive-art cards, whose exclusive animations function as visible markers of exceptional rarity and distinction. In this way, the stimulus reinforces the desire to open further packs.

Figure 5. Screenshots of *in-game* pack openings

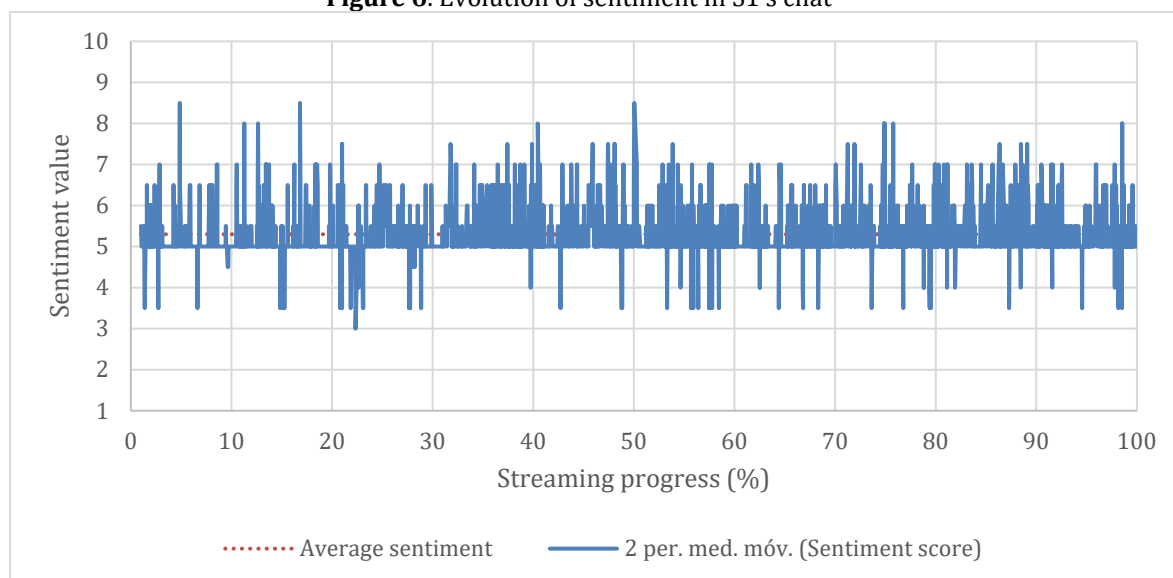


Source: Pokémon TCG Pocket

The affective dimension fluctuates according to the sentiments reflected in the stream *chat* (see Figures 6 and 7), which correlate with good luck or success (peaks of greater positive sentiment), bad luck or failure (peaks of greater negative sentiment) during pack openings, and social pressure to maintain the pace of play. On S1's channel, the creator's risk-taking is normalised through humour and irony in expressions such as "gambling addiction is a banger" or "gambling addiction Hype". In this way, the *chat* functions as a driving force encouraging constant spending through direct requests to pull

again, such as "another multi!" or "ANOTHER", prompting the *streamer* to prolong the spending and chance-based dynamic. This dynamic persists in the face of negative outcomes, when the *streamer* sets limits such as "not spending too much" (S3), or when S1 verbalises frustration at failing to obtain rewards: "I'm getting worked up now, please", accompanied by reactive outbursts ("Are you kidding me?"), or when the game anticipates a special reward through its visual ritual only for the reward to be an unwanted or low-value card.

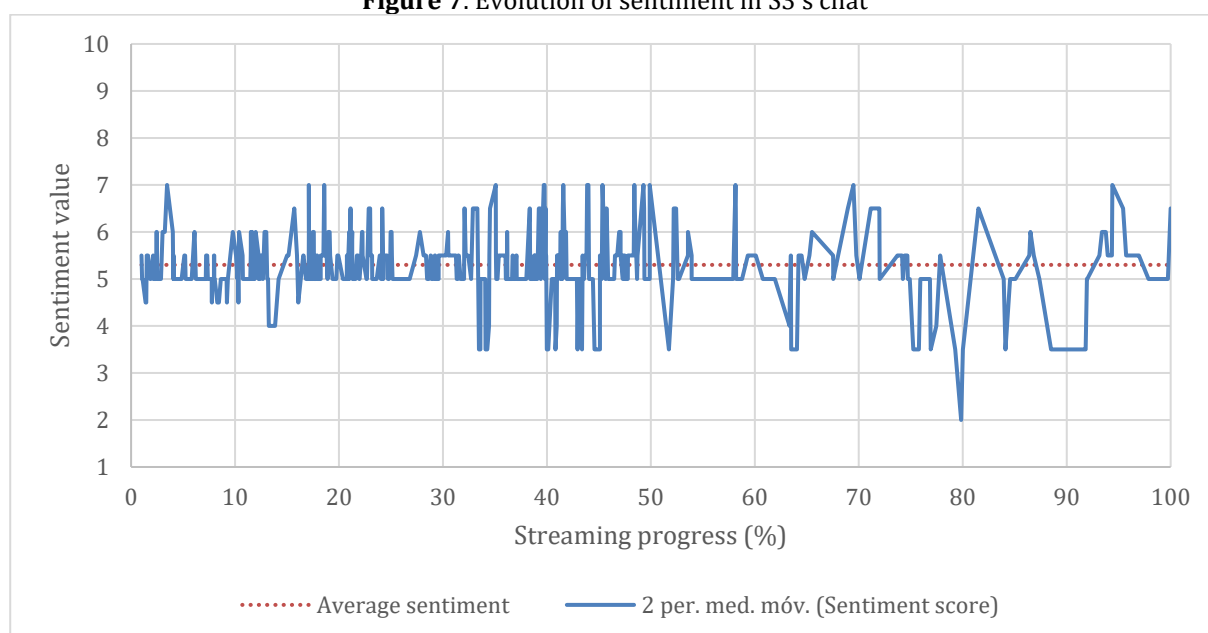
Figure 6. Evolution of sentiment in S1's chat



Source: Authors' own elaboration, 2026.

In S3's case, the community adopts a more supportive approach: the *streamer* is described as lucky ("you're really lucky in Pocket with the rainbows and everything") and receives expressions of solidarity during runs of bad luck. This negative sentiment appears in messages that accept the title's chance-based framework ("Everyone excuses their gambling addiction in their own way") and in comparisons with users' own gaming experiences ("luck wasn't on my side. 0 Suicune so far"). This emotional synchrony validates the *gacha* algorithm not as a monetisation system, but as the generator of the narrative and tension necessary for community belonging. For example, S1 discusses with the chat how gambling in this game is not expensive compared with other video games of this kind.

Figure 7. Evolution of sentiment in S3's chat



Source: Authors' own elaboration, 2026.

The identity dimension reveals an established pattern: consumption is integrated into the channel's identity through belonging and nominal inclusion, thereby constructing collective agency. For S1, this "we" is used to generate cohesion around a sense of grievance and suspicion regarding rarity ("they're laughing at us" —referring to the game developers—), as well as to regulate the creator-audience relationship when the *streamer* prioritises pack openings over the *chat* ("he robs us and ignores us"). In S3, identification is sustained more through companionship and the exchange of knowledge, but converges on the same point: the community understands itself as a co-protagonist in the process of obtaining rewards.

In both streams, the creator tends to present themselves as an expert mediator, enabling discussions about the usefulness of cards within the metagame. The normalisation of consumption is also expressed through discussions of resource management ("worth", "by saving hourglasses you can build every deck"). Ultimately, pack consumption is perceived as a status requirement for joining the elite group of players who can "*flex* cards", that is, show off unique items to others, thereby consolidating the viewer's identity as part of a competitive and expert consumer community.

4.3. *Umamusume: Pretty Derby*

A multiplatform racing simulation title in which players take on the role of trainers of a group of *idols* who are "horse girls". The game uses "Carats" as virtual currency to obtain new racers and support cards through chance-based mechanics. The gaming experience combines the management of training routines with participation in major races aimed at competitive progression (Umamusume, 2025).

In the visual dimension, S1's staging is based on a *webcam* framing the creator's face and gestures while obtaining new *Umamusumes*, the game's characters. The framing remains fixed at the bottom of the screen so as not to interfere with navigation through the game's tactical menus. Unlike streams of other titles, S1 does not use a customised aesthetic or themed frames in this instance. In S4's case, the characteristic visual hierarchy of the streams is maintained through a large VTuber avatar occupying almost as much of the scene as the *gameplay*. S4 also explicitly incorporates the sponsor *Lootbar.gg* at the top of the *overlay* to encourage the purchase of virtual currency.

In both streams, the production is relatively static (no scene changes are observed), meaning that retention depends primarily on the game's own visual architecture. During the *gacha* sequence, the phase in which units are randomly obtained, the interface eliminates external elements to focus attention on the aesthetics of the female characters.

The sensory climax is constructed through a staged audiovisual sequence. First, a character appears whose identity acts as an initial marker of the potential value of the reward; subsequently, during the race towards the gates, the colour of the lighting functions as a second anticipatory indicator: certain tones signal a greater likelihood of a high-value outcome. Next, the starting screen displays the racing gates: rainbow flashes around the cell frames confirm maximum rarity (Figure 8). This visual coding is reinforced by metallic chimes and a fanfare, which intensify the affective response and synchronise the reactions of the creator and the chat when exclusive units are obtained.

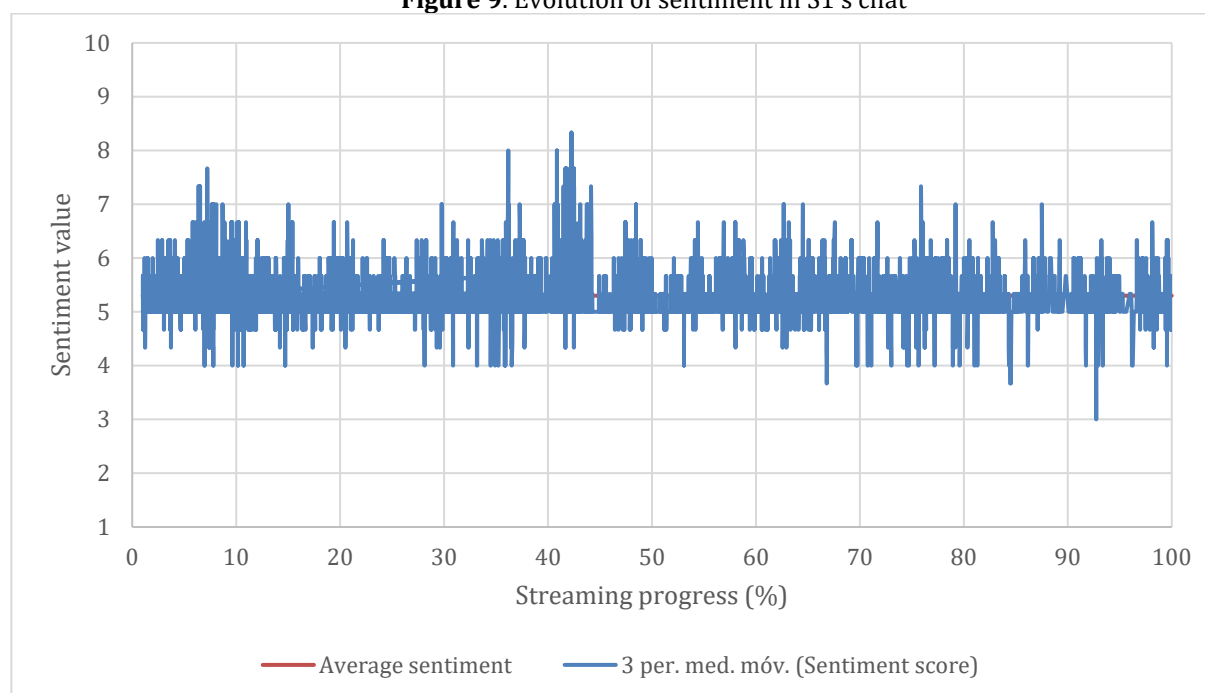
Figure 8. Screenshots of *in-game* reward openings



Source: Umamusume: Pretty Derby

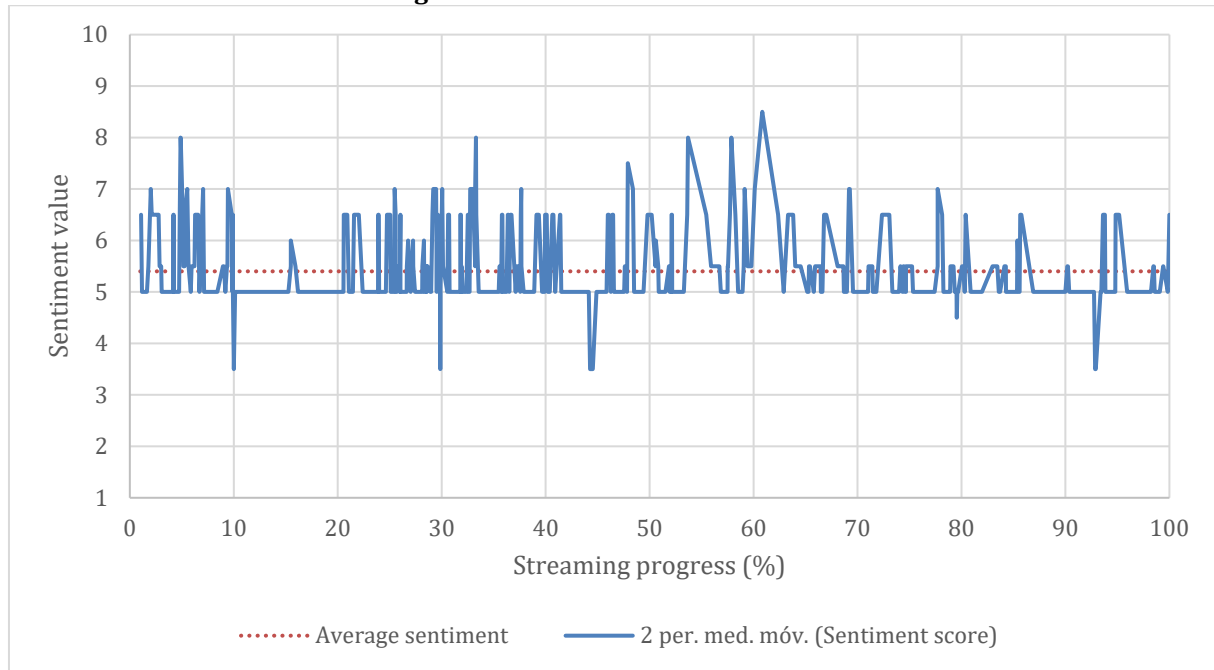
In the affective dimension, the evolution of chat sentiment (Figures 9 and 10) is primarily associated with the outcome of the summons —success or failure— and with audience pressure to maintain the pace of spending, in contrast with more neutral segments linked to management and training mechanics that do not activate chance-based systems. On S1's channel, financial risk is normalised through humour and irony, transforming the *streamer's* expenditure into shared entertainment. For example, messages such as "gambling addiction now" appear alongside choral repetitions of a refrain created by the community ("THEY'RE LOCKING ME UP, THEY'RE LOCKING ME UP, FUCKING HORSE GIRLS, GAMBLING ADDICTION NOW"). Within this framework, the *chat* acts as a driver of continuation through direct demands ("another multi, it's hot") and labels referring to the creator's spending capacity ("what a whale"). When the creator attempts to halt the dynamic, viewers reframe the limit by referring to their financial position ("saving is for poor people") or criticising the amount invested ("he's loaded and only puts in €4"). The creator's frustration is expressed explicitly when the desired unit is not obtained ("what rubbish", "I'm getting worked up") and intensifies at moments of heightened expectation generated by the game's visual signals anticipating a potentially valuable outcome.

Figure 9. Evolution of sentiment in S1's chat



Source: Authors' own elaboration, 2026.

For S4, the management of luck is articulated through much closer support from the audience. The community uses humour to soften adverse outcomes with phrases such as "The luck of someone who doesn't shower" or "you're poor". This emotional connection is evident when followers share their own progress and frustrations alongside the *streamer*, with messages such as "I'm on pull 170-something", or lament their own bad luck when seeking a character: "I've lost count of how many pulls I've done for *Falcon* and the bloody thing still hasn't appeared". There are even jokes about the creator's lack of financial involvement when she does not gamble. Overall, these practices sustain the *gacha* as the narrative engine of the stream: success is celebrated as a collective achievement and failure is managed through solidarity within the community.

Figure 10. Evolution of sentiment in S4's chat

Source: Authors' own elaboration, 2026.

Finally, the identity dimension reveals a consolidation of consumption through a sense of belonging that connects followers both with the creator and with the video game universe, reinforced by the recurrent use of themed emoticons on both channels. Unlike other streams, the bond is not based on a group identity acting as a uniform bloc, but rather on a shared experience of uncertainty in which viewers experience the suspense of the *streamer's* pulls as though they were their own, seeking validation in the *chat* for their own luck or knowledge of the game.

Although neither creator positions themselves as an expert, given that the video game was released at the end of June, their communities assume specific roles in mediating their gaming experience.

S1 adopts the role of learner, while the *chat* acts as a source of technical support, introducing discussions of the metagame through messages specifying whether a card is "S tier" because of its "debuffs", or pointing out the importance of "inheritance" for optimising racers. Technical knowledge flows from the audience, which recommends which *banners* are best in order to understand "what is good and what isn't", while the creator decides whether to perform a pull or continue saving resources. S4, by contrast, adopts a role based on friendship and closeness, in which the parasocial bond is the driving force behind the channel's identity, with affectionate messages such as "ily" or "love you so much uwu". In this environment, success or failure in the *gacha* is experienced as a shared experience among friends who celebrate results or joke about "poverty" after spending, while both communities actively discuss saving virtual currency to complete their collections.

4.4. Wuthering Waves

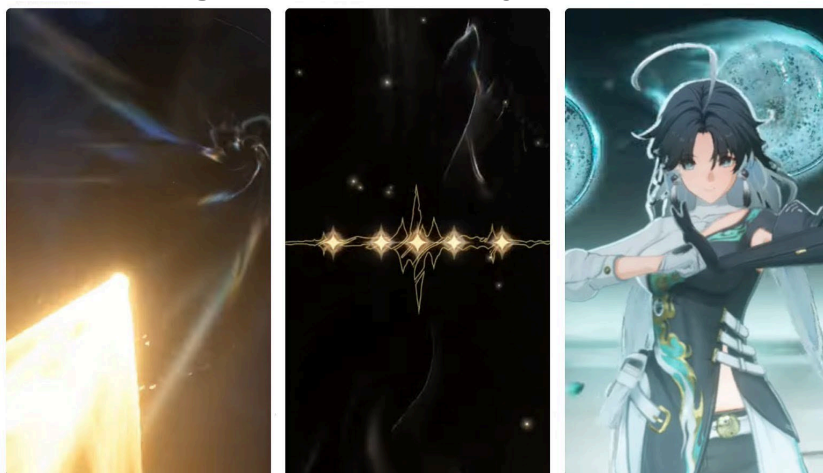
A multiplatform video game focused on exploration and real-time combat. The player embarks on a journey alongside the *Resonators* (collectable playable characters) to recover their memories and transform the world. It uses a random summoning system (*Convene*) to obtain characters and weapons (Kuro Games, n.d.).

In the visual dimension, S1 and S2 prioritise human presence through relatively simple staging. In both cases, a *webcam* feed is statically integrated into one side of the screen without obscuring the game menus. However, the staging differs according to scale and associated production resources. On the one hand, S1 creates greater dynamism through a higher level of production: alternative *overlays* featuring animated backgrounds and customised illustrations. On the other hand, S2 uses a more austere fixed composition with less graphical intervention over the game image (a branded channel border around the *webcam* image). In both cases, this choice shifts attention towards the game's own architecture,

meaning that the "spectacle" depends less on the editing of the stream than on the staging of the *gacha* system itself.

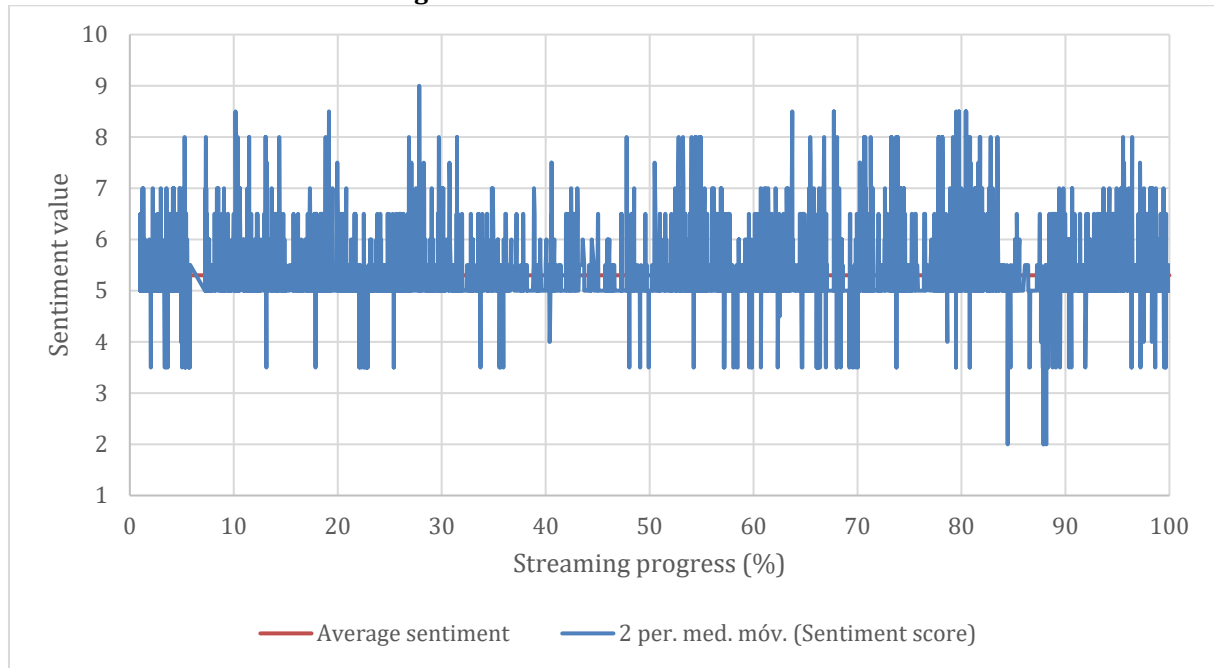
This system reinforces viewer retention during the streams through the summoning process. In *Wuthering Waves*, each summon activates an animation that anticipates the rarity of the forthcoming reward through chromatic signals. A golden colour indicates maximum-rarity rewards, triggering euphoria in both cases. In addition, the system incorporates thresholds and guarantee mechanisms that sustain repetition of the cycle (Figure 11).

Figure 11. Screenshots of *in-game* rewards

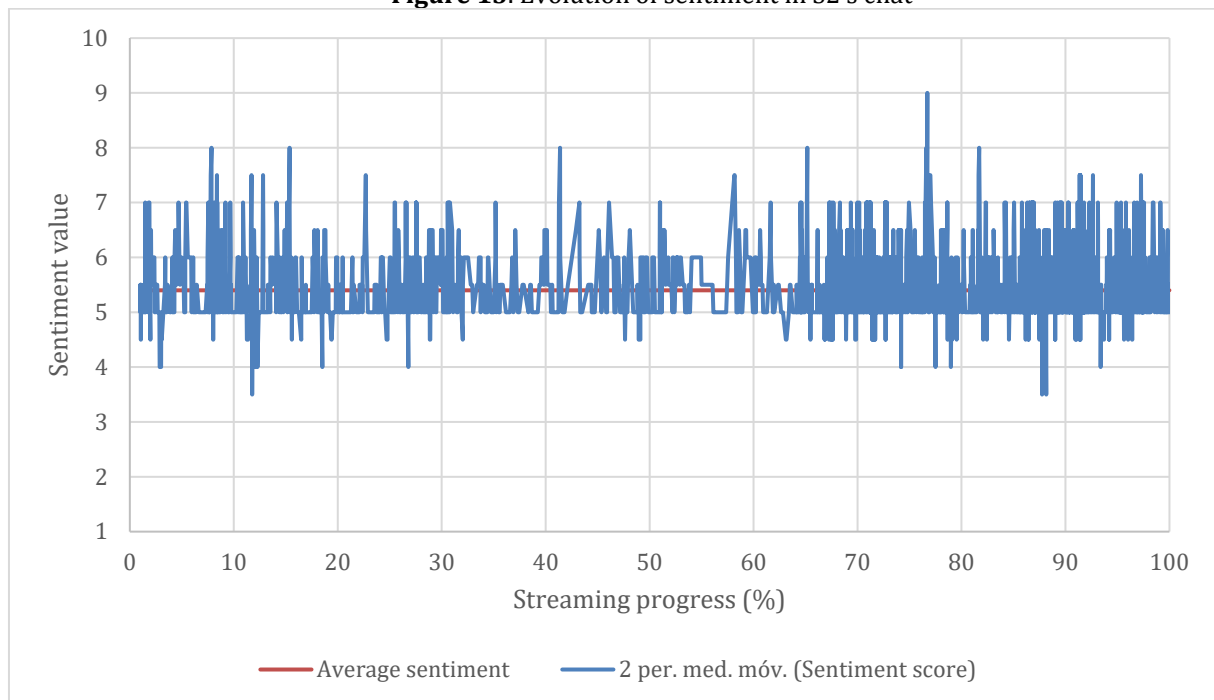


Source: Wuthering Waves.

The affective dimension reflects this visual construction. Figures 12 and 13 show the correlation between *chat* activity and the moments when both streams enter the summoning ritual. However, this intensity does not take a single form, but is expressed through a combination of anticipation, playful pressure and humorous reproach. For S1, this dynamic is reflected in a flood of short messages, exclamations and *emotes* that turn the moment into collective *hype*, both through expressions of anticipation ("Here they coooome") and celebrations of successful outcomes ("WUWA GOZ"). In this way, the community pushes the creator to "make content" through chance-based mechanics, particularly when the outcome does not match expectations. At such moments, frustration takes the form of a collective shift towards humour that criticises the game system ("what a shit gacha"), alongside attributions of blame that shift responsibility away from chance and towards the creator's performance ("because you're bad", "because you're addicted"). This transforms failure into a narrative episode: the *streamer* does not "lose" because of probability, but because of their public identity (addicted, inept, or unable to stop in time). By contrast, in S2, affectivity is articulated in a more relational and sustained manner, with a community that provides companionship and emotional support. On this channel, even when humour ("someone's not eating today") or collective laughter (bursts of "xdd" or "KEK") predominates, emotion is not confined to the "shout of the reward", but is incorporated into a community narrative that justifies and normalises the system: the harshness of chance is discussed, poor outcomes are reframed as a shared injustice and the ground is prepared for continued play. This normalisation becomes explicit when the promotional *bot* appears ("Spend less... or whale more"), connecting the emotional atmosphere of the stream with the commercial circuit of top-ups.

Figure 12. Evolution of sentiment in S1's chat

Source: Authors' own elaboration, 2026.

Figure 13. Evolution of sentiment in S2's chat

Source: Authors' own elaboration, 2026.

Both dimensions converge in the construction of this identity which, in *Wuthering Waves*, articulates belonging through stable community roles: evaluating the *streamer*, contributing knowledge about the game and accompanying the creator throughout the experience. For S1, the channel's identity is organised around the creator as a public figure subject to judgement: the *chat* classifies and symbolically legitimises the creator ("whale", "gambling addict", "*streamer account*" or "*rigged account*" —indicating that the account is perceived as being manipulated by the developers—). For S2, identity is constructed as a space of continuity, where the *chat* functions as a source of cultural and technical support: the *F2P* experience is explicitly discussed in relation to the conditions imposed by the system ("in Wuwa that's deadly for an F2P"). Overall, the stream consolidates a "we" that not only reacts, but also regulates and

gives meaning to consumption in real time, establishing who has authority, who provides support and what counts as legitimate practice within the channel.

5. Discussion and Conclusions

The results reveal a convergence, within the sample analysed, between the design of *gacha* games and the staging employed by *streamers*. A common pattern emerges in the visual dimension, which we define as an "architecture of visual-environment suppression". Whether in the shooting star of *Genshin Impact* or *Wuthering Waves*, the tearing open of packs in *Pokémon TCG Pocket* or the stable gates in *Umamusume: Pretty Derby*, the video game eliminates peripheral distractions in order to focus attention on the sensory climax of chance. Thus, with regard to the first research question, the analysis indicates that *streamers* mediate *gacha* mechanics through three recurring strategies: dramatisation of risk (tension before the outcome, gestures or shouting), reframing losses together with their community and, finally, relying on the system's own structure to turn the pull into a meaningful progression, thereby reframing "spending" as "progress" towards the goal.

In parallel, the four streams display a similar "closure of the ritual", whereby the moment of greatest emotional intensity becomes a conversion threshold (links, reminders to top up or requests to subscribe to the channel). In this way, live spending ceases to be a private decision on the part of the *streamer* and is reframed as a community action.

The affective dimension and persuasive communication strategies are linked to the second research question. The analysis confirms how the audience shapes the normalisation of consumption and how the stream catalyses a collective need to spend. On larger channels (S1 and S2), the main strategy is the ironic treatment of risk. By turning addiction into a *meme* —such as jokes about "gambling addiction" or songs created by S1's fans— the *streamer* strips real money of its financial weight and endows it with purely playful and social value. The behavioural pattern identified as "getting worked up" is fundamental: the creator verbalises their frustration and the *chat* responds with dialectical pressure demanding that they continue pulling in order to generate more content, a phenomenon reflected in the various automated sentiment-analysis graphs. This dynamic creates a communicative trap in which the *streamer* appears to give in to the audience, thereby legitimising spending as a sacrifice made for the sake of the spectacle. By contrast, in smaller communities (S3 and S4), affectivity is based on intimacy and shared victimhood. Here, *streamers* do not spend in order to demonstrate power, but participate in chance as friends subjected to the same rules of the system, encouraging audiences to make donations to help or share in-game strategies so that the cycle of pulls can continue.

With regard to the third question, the results provide a relevant finding concerning the identity dimension. Audience size can be said to exert a decisive influence on the effectiveness of communication between broadcaster and audience. In macro-communities, effectiveness derives from group pressure and the validation of the "whale", whereby high spending is a requirement for maintaining the status of leader and expert reference point. In micro-communities, by contrast, the communicative impact is deeper in terms of loyalty, as *streamers* do not need to spend large amounts in order to be effective: their success is experienced as a triumph within the community and their failure as a collective loss. This demonstrates that spending is normalised on large channels through status, whereas on small channels it is normalised through affective reinforcement and shared survival within the game. The integration of sponsors at both audience levels completes the commercial cycle, transforming the emotions generated by the stream into an immediate opportunity for economic transactions normalised through the creator's recommendation.

Collective interaction also contributes to the validation of chance algorithms through distinctive expressive codes. Terms such as "mufada", "salado" or the widespread use of "F" in response to failure demonstrate that audiences accept the logic of randomised monetisation as a norm of the ecosystem. Chance thus shapes the spectator's "digital self": by debating whether a pull is "worth" it or analysing *pity*, users cease to be passive observers and become consumption strategists, acquiring a false belief in their control over the randomised mechanics of the games. This exchange of knowledge, particularly extensive in S2's *chat* because of the creator's role as a guide, provides spending with a purpose.

In relation to the objectives established, this analysis has successfully categorised rituals of success and failure (Objective 1). Success is ritualised through the synchronisation of shouting, fanfares and *emotes* such as "stonks" or "goz", while failure is managed through the *chat's* aggressive irony or through

the sadness or anger staged by the *streamers*. Likewise, the logics of the identity dimension have been compared (Objective 2), revealing that large-scale audiences favour the role of the "expert/whale", whereas smaller audiences are associated with the "companion/victim". Thus, *gacha* video game *streaming* has been shown not merely to represent chance, but to turn it into a structure of social belonging in which desire is mediated by constant interaction between the video game, the creator and their *chat* across the three dimensions analysed.

Finally, the limitations of the study should be underlined: although the corpus is substantial and makes it possible to describe the rituals and dynamics observed with precision, the temporal scope limits the identification of longitudinal trends, while the selection of Spanish-speaking channels constrains cultural generalisability. Future replications should therefore extend the monitoring period and include *streamers* from other regions and languages. Likewise, Twitch's own pragmatics (slang, *emotes*, polysemy and irony) introduce methodological friction into automated sentiment analysis, which may underestimate key affective nuances. These limitations point to two priority lines of research: (1) longitudinal studies connecting rituals, affective synchrony and "conversion" in order to estimate the extent to which emotional peaks predict consumption; and (2) a specific examination of the ethical responsibility involved in promoting top-ups and affiliate links, particularly among young audiences.

6. Acknowledgements

This work forms part of the following projects: [1] Persuasive Communication in Video Games as a Service: Problematic Uses among Generation Z (PERVID GEN Z) (PR17/24-31893), funded under the agreement between the Community of Madrid and the Complutense University of Madrid; and [2] Political Radicalisation in Digital Gaming Environments: Production, Mediation and Dissemination of Extremist Ideologies -Rage Game- (PID2024-158794OB-I00), funded by the Spanish State Research Agency (Ministry of Science, Innovation and Universities).

References

- Brooks, G. A., & Clark, L. (2019). Associations between loot box use, problematic gaming and gambling, and gambling-related cognitions. *Addictive behaviors*, 96, 26-34. <https://doi.org/10.1016/j.addbeh.2019.04.009>
- Buscemi, A., & Proverbio, D. (2024). Chatgpt vs gemini vs llama on multilingual sentiment analysis. arXiv preprint arXiv:2402.01715. <https://doi.org/10.48550/arXiv.2402.01715>
- Chaudhary, S. (2024, September). Now Streaming Sentiments: A Comparative Analysis of GPT and Gemini in Evaluation of OTT Streaming Show Reviews. In *2024 Conference on AI, Science, Engineering, and Technology (AIxSET)* (pp. 61-68). IEEE. <https://doi.org/10.1109/AIxSET62544.2024.00014>
- Chen, C., & Fang, Z. (2023). Gacha game analysis and design. *Proceedings of the ACM on Measurement and Analysis of Computing Systems*, 7(1), 1-45. <https://doi.org/10.1145/3579438>
- Cristancho, G. J., Forero, C. A., & Ramírez, L. A. (2023). Streamers, influencers y videojuegos: el efecto del product placement en el contenido gamer. *methaodos. revista de ciencias sociales*, 11(2). <https://doi.org/10.17502/mrcs.v11i2.658>
- Davidovici-Nora, M. (2014). Paid and free digital business models innovations in the video game industry. *Digiworld Economic Journal*, 94(2), 83-102 <https://ssrn.com/abstract=2534022>
- Debord, G. (2000). *La sociedad del espectáculo*. Valencia: Pre-textos.
- Drummond, A., & Sauer, J. D. (2018). Video game loot boxes are psychologically akin to gambling. *Nature Human Behaviour*, 2(8), 530-532. <https://doi.org/10.1038/s41562-018-0360-1>
- Francisco, N., & Rodríguez, A. I. (2020). La innovación de la Televisión Pública Europea en la oferta audiovisual digital: nuevas plataformas para la Generación Z. *Revista de la Asociación Española de Investigación de la Comunicación*, 7(13), 185-212. <https://doi.org/10.24137/raeic.7.13.9>
- Gacha Revenue. (2025, December). *Revenue overview*. <https://revenue.ennead.cc/revenue>
- García Rivero, A., Martínez Estrella, E.C., & Bonales Daimiel, G. (2022). TikTok y Twitch: nuevos medios y fórmulas para impactar en la Generación Z. *Icono* 14, 20(1). <https://doi.org/10.7195/ri14.v20i1.1770>
- Gutiérrez-Manjón, S., Álvarez-García, S. & Mena-Muñoz, S. (2022). Visionado colectivo de cine en la red social Twitch por parte de 'centennials': estudio de caso. *index.Comunicación*, 12(1), 205-234. <https://doi.org/10.33732/ixc/12/01Vision>
- Han, J. W. (2025). Effects of Mobile Gacha Games on Gambling Behavior and Psychological Health. <https://doi.org/10.48550/arXiv.2504.00057>
- Hidalgo, A. (2019). Loot boxes: juegos de azar encubiertos al alcance de menores. *Revista jurídica de Castilla y León*, 47, 25-58. https://www.jcyl.es/web/jcyl/AdministracionPublica/es/Plantilla100Detalle/1131978346397/_/1284841593285/Redaccion
- Hilvert-Bruce, Z., Neill, J. T., Sjöblom, M., & Hamari, J. (2018). Social motivations of live-streaming viewer engagement on Twitch. *Computers in human behavior*, 84, 58-67. <https://doi.org/10.1016/j.chb.2018.02.013>
- Hoyoverse. (2025, Diciembre). *Presentación del juego*. Genshin Impact. <https://genshin.hoyoverse.com/es/game>
- IAB Spain. (2025). *Estudio anual de redes sociales 2025*. Interactive Advertising Bureau. <https://iabspain.es/estudio/estudio-redes-sociales-2025-iab-spain/>
- Ivanov, M., Wittenzellner, H., & Wardaszko, M. (2021). *Video game monetization mechanisms in triple A (AAA) video games*. In Wardaszko, M. et al. (Dirs.) *Simulation Gaming Through Times and Disciplines: 50th International Simulation and Gaming Association Conference* (pp. 389-404). Springer International Publishing. https://doi.org/10.1007/978-3-030-72132-9_33
- Jenkins, H., Ford, S., & Green, J. (2015). *Cultura transmedia*. Barcelona: Gedisa editorial.
- Jodén, H., & Strandell, J. (2021). Building viewer engagement through interaction rituals on Twitch.tv. *Information, Communication & Society*, 25(13), 1969-1986. <https://doi.org/10.1080/1369118X.2021.1913211>

- Kamamura, T., Koyama, Y., Mori, T., Motonishi, T., & Ogawa, K. (2022). Loot box gambling and economic preferences: a survey analysis of Japanese adolescents and young adults. *Applied Economics*, 55(44), 5213–5229. <https://doi.org/10.1080/00036846.2022.2138817>
- Kaleva, J. (2022, August). *A EGDF white paper: Games as a driving force of the 21st century*. European Game Developers Federation (EGDF). <https://www.egdf.eu/wp-content/uploads/2022/08/EGDF-tech-white-paper.pdf>
- King, D. L., & Delfabbro, P. H. (2018). Predatory monetization schemes in video Games (e.g. 'loot boxes') and internet gaming disorder. *Addiction*, 113(11), 1967–1969. <https://doi.org/10.1111/add.14286>
- King, R., & De La Hera, T. (2020). Fortnite streamers as influencers: A study on gamers' perceptions. *The Computer Games Journal*, 9(4), 349–368. <https://doi.org/10.1007/s40869-020-00112-6>
- Kowert, R., & Daniel, E. (2021). The one-and-a-half sided parasocial relationship: The curious case of live streaming. *Computers in human behavior reports*, 4. <https://doi.org/10.1016/j.chbr.2021.100150>
- Kuro Games. (s.f.). *Wuthering Waves* [Videojuego]. Steam. Recuperado el 29 de enero de 2026, de https://store.steampowered.com/app/3513350/Wuthering_Waves
- Lee, S., Lee, S., & Baek, H. (2025). How does live streaming impact media content consumption? The effect of game live streaming on game players. *Entertainment Computing*, 52, 100802. <https://doi.org/10.1016/j.entcom.2024.100802>
- Lehtonen, M. J., Vesa, M., & Harviainen, J. T. (2022). Games-as-a-Disservice: Emergent value co-destruction in platform business models. *Journal of Business Research*, 141, 564–574. <https://doi.org/10.1016/j.jbusres.2021.11.055>
- Leith, A. P. (2021). Parasocial cues: The ubiquity of parasocial relationships on Twitch. *Communication monographs*, 88(1), 111–129. <https://doi.org/10.1080/03637751.2020.1868544>
- Llopis-Amorós, M. P., Gil-Saura, I., Ruiz-Molina, M. E. & Fuentes-Blasco, M. (2019). Social media communications and festival brand equity: Millennials vs Centennials. *Journal of Hospitality and Tourism Management*, 40, 134–144. <https://doi.org/10.1016/j.jhtm.2019.08.002>
- Ma, X., Chen, H., Lang, X., Li, T., Wu, N., & Duong, B. (2024). Research on the impact of streamers' linguistic emotional valence on live streaming performance in live streaming shopping environments. *Journal of Retailing and Consumer Services*, 81, 104040. <https://doi.org/10.1016/j.jretconser.2024.104040>
- Mejías, G., Roberts, M., & Cuesta, U. (2024). Identidad visual y gambling en el ecosistema de cajas botón del videojuego Counter-Strike. *VISUAL REVIEW. International Visual Culture Review*, 16(3), 279–290. <https://doi.org/10.62161/revvisual.v16.5266>
- Mut, M. (2022). Videojuegos, un territorio narrativo para las marcas: El caso de Tortillaland. *VISUAL REVIEW. International Visual Culture Review*, 10(4), 1–10. <https://doi.org/10.37467/revvisual.v9.3618>
- Newzoo. (2025, September). *2025 Global Games market report*. Newzoo. <https://newzoo.com/resources/trend-reports/newzoo-global-games-market-report-2025>
- Robinson, R. (2018). *All the feels: a twitch overlay that displays streamers' biometrics to spectators*. University of California, Santa Cruz.
- Ros, J., & Gutiérrez-Manjón, S. (2022). The expression of boredom and unwanted loneliness on Twitch. *ICONO 14, Revista de comunicación y tecnologías emergentes*, 20(2), 1–22. <https://doi.org/10.7195/ri14.v20i2.1866>
- Speed, A., Burnett, A., & Robinson II, T. (2023). Beyond the Game: Understanding why people enjoy viewing Twitch. *Entertainment Computing*, 45. <https://doi.org/10.1016/j.entcom.2022.100545>
- TCG Pocket. (2025, Diciembre). ¡Juego de Cartas Coleccionables Pokémon Pocket ya disponible! Pokémon TCG Pocket. <https://tcgpocket.pokemon.com>
- Umamusume. (2025, Diciembre). *Umamusume: Pretty Derby*. <https://umamusume.com>
- Woods, O. (2022). The economy of time, the rationalisation of resources: Discipline, desire and deferred value in the playing of gacha games. *Games and Culture*, 17(8), 1075–1092. <https://doi.org/10.1177/15554120221077728>

- Woods, O. (2024). The affective embeddings of gacha games: Aesthetic assemblages and the mediated expression of the self. *New Media & Society*, 26(2), 823-838. <https://doi.org/10.1177/14614448211067756>
- Wulf, T., Schneider, F. M., & Queck, J. (2021). Exploring viewers' experiences of parasocial interactions with videogame streamers on Twitch. *Cyberpsychology, Behavior, and Social Networking*, 24(10), 648-653. <https://doi.org/10.1089/cyber.2020.0546>
- Zagal, J.P., Björk, S., & Lewis, C. (2013). *Dark patterns in the design of games*. In G. N. Yannakakis and E. Aarseth (Dirs.). International Conference on Foundations of Digital Games (pp. 1-8). <https://www.diva-portal.org/smash/get/diva2:1043332/FULLTEXT01.pdf>
- Zendle, D., & Cairns, P. (2018) Video game loot boxes are linked to problem gambling: Results of a large-scale survey. *PLoS ONE*, 13(11), pp. 1-12. <https://doi.org/10.1371/journal.pone.0206767>