

Where Do We Fall, Guys?


New Forms of Subscription-Based Monetisation, Their Relationship With Mental Health Issues, and Their Policy Implications

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ABSTRACT

This article examines monetization in video games, with a focus on battle and season passes, their risks and their presence, in videogames aimed at minors. Through the analysis of 105 PlayStation 5 titles, this study explored the prevalence of these monetization systems in free-to-play and paid games, along with their impact on game dynamics and player behavior. The findings revealed a significant uptake of battle passes in free-to-play games and a preference for season passes in paid games. These results of this research suggest a worrying connection between aggressive monetization and problematic gaming practices, particularly in titles aimed at young audiences. This study contributes to an understanding of contemporary monetization strategies and their potential impact on young gamers.

KEYWORDS

Video Games, Criminology, Loot Boxes, Monetisation, Mental Health, Gambling Disorder

INTRODUCTION

The ways people work, communicate and spend their leisure time has been largely reshaped by the digital revolution. Since 2014, the video game industry has surpassed the film industry in terms of economic profit and output. In 2022, for example, videogame profits were not only five times larger than those of the film industry, but also exceeded those of the film and music industries combined (Arora, 2023; Goh et al., 2023). Gaming has been the subject of various controversies, however, drawing both public and government attention (Goh et al., 2023). One cause for this attention has been the industry's aggressive monetization methods, closely linked to the games themselves (Johnson & Brock, 2020).

The study presented in this article examined the most common monetization methods in the current video game industry, with a particular focus on the analysis of so-called battle passes and season passes. Additionally, researchers investigated the video game industry's relationship with in-game social interaction, game immersion and pathological gaming behavior. Despite the scarcity of available literature on this issue, it is understood that battle passes and season passes are two very popular forms of monetization in video games, consisting of regular or one-off payments for access

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to certain in-game content, either through play or through further payments (Sowole, 2023; Zendle & Petrovskaya, 2020). The interest in these systems stems not only from their popularity, but also from their relationship with other forms of monetization and their potential consequences in terms of encouraging excessive spending or pathological gambling behavior.

As highlighted in the European Parliament resolution on consumer protection in online video games, there is a growing concern regarding the impact of aggressive monetization practices on consumers, particularly minors (European Parliament, 2023). Consequently, this study examined the use of battle passes and season passes to determine their prevalence in free-to-play and paid games, as well as establish their relationship with other forms of monetization. Accordingly, 105 PlayStation 5 games were analyzed; 45 of those were free-to-play and 60 in payment. The results showed that a significant percentage of free-to-play games included monetization through battle passes, while paid games trended toward season passes. In addition, the prevalence of elements such as loot boxes and the purchase of virtual currency—associated with pathological gambling—was found to be particularly high in games with a Pan European Game Information (PEGI) rating for children.

The Video Games Industry and Aggressive Monetization

The video game industry—which boasts a CAGR of 4.3% in 2022 and a compound annual growth rate of 16%—reached a revenue of \$184.4 billion USD in 2022, a figure that reflects its economic importance in the global landscape (Arora, 2023; Johnson & Brock, 2020). Much of this growth is due to the increasing popularity of mobile games, although consoles and computers are not far behind (Goh et al., 2023; Johnson & Brock, 2020). The broad demographic of gamers reflects the mass acceptance of videogames. In fact, 61% of the US population, averaging 33 years of age, participate in this form of entertainment (Entertainment Software Association, 2024). This dynamism is underlined by strategic corporate moves, such as the acquisition of Activision Blizzard by Microsoft in 2023, a milestone in the entertainment industry that has become the largest economic operation in the history of the sector (Sánchez-Vallejo, 2023).

Despite these figures, there appear to be some signs of a slowdown in growth, leading to large-scale layoffs within a significant sector of the industry. The industry is still generating a huge amount of profit, however, largely derived from game sales, but also from the application of in-game monetization techniques (King & Delfabbro, 2018; *Game Production Studies*, 2021). Today's industry is characterized by the “freemium” model, which allows free access while monetizing in-game transactions (Dastakeer, 2024; Johnson & Brock, 2020; Zachow, 2023). Among the most common strategies are loot boxes and micropayments, where players spend money for random or specific rewards, ranging from cosmetic enhancements to items that directly affect gameplay (Etchells et al., 2022). Post-release downloadable content (DLC), which can retain essential gameplay elements, provides another controversial strategy that can force users to spend additional money to enjoy the full game experience (Macey & Hamari, 2018).

Subscriptions—such as the season and battle passes discussed in this article—represent a monetary method that grants players access to a system of progression and rewards user participation or additional monetary investment. They are particularly common in free-to-play games (Alha et al., 2016). While lucrative, these methods have been criticized for compromising creative integrity, encouraging addictive patterns of play, and exploiting younger and vulnerable players. Aggressive monetization has been highlighted as a threat to player welfare (King et al., 2019). Indeed, the European Parliament resolution of 18th January 2023 emphasized the importance of consumer protection regarding online video games, particularly for minors. The resolution called for increased transparency, better parental control tools, and harmonized regulations across the European Union to protect consumers from aggressive monetization practices (European Parliament, 2023). This regulatory concern over monetization practices continues to grow, driven by the significant revenues generated by the gaming industry (King et al., 2019).

Pathological Gambling and the Exploitation of Cognitive Biases

Several studies (Brooks & Clark, 2019; King & Delfabbro, 2018; King et al., 2019; Király et al., 2022) have found significant associations between certain aggressive monetization practices used by the video game industry and the risk of developing pathological gambling behaviors¹ (Brooks & Clark, 2019; Király et al., 2022). These associations can be better understood through the cognitive behavioral model of addiction (Blaszczynski & Nower, 2002), and the components model of addiction (Griffiths, 2005). Together, these models frame addictive behaviors as the result of an interplay between predisposing factors, external triggers, and specific behavioral components. These models help make it clear as to how the mechanics of battle passes and season passes may trigger addictive behaviors. Specifically, the cognitive behavioral model suggests that younger players, with their cognitive development still ongoing, might be particularly susceptible to the variable rewards offered by these passes, thereby creating a cycle of repeated gameplay and further purchases (Vancappel & El-Hage, 2023). The cognitive behavioral model emphasizes that certain groups, such as minors, are particularly vulnerable to addictive behaviors due to psychological and social factors (Blaszczynski & Nower, 2002). These include incomplete cognitive development, high suggestibility, and exposure to peer pressure.

Loot boxes have been widely criticized as a randomized reward system that may reinforce compulsive gambling behavior (Etchells et al., 2022). A study by Brooks and Clark in 2019 found that players who opened loot boxes experienced a so-called near miss effect, which refers to the unsatisfactory experience of almost winning or almost receiving a valuable reward. This phenomenon generates a sense of frustration and a feeling of unachieved finality that encourages players to open subsequent boxes. In loot box systems, this effect occurs when users almost receive the most valuable or rare item upon opening a box, but they are given a smaller reward instead. The study on loot boxes in online games, commissioned by the European Parliament's Committee on the Internal Market and Consumer Protection (IMCO) further underscored the problematic nature of loot boxes, due to their resemblance to games of chance. Furthermore, this could act as a gateway to gambling, particularly affecting young consumers (Cerulli-Harms, 2020). The same effect can be found in other game models, such as the "gachapon" model in mobile games. However, this phenomenon is not unique to monetization in video games, as it replicates previous patterns observed in traditional gambling systems (King & Delfabbro, 2018; Richard et al., 2021).

As previously mentioned, techniques that exploit the psychological biases of the player, and that are associated with pathological problems related to gambling (gambling disorder or gaming disorder), can be found in videogames (Burleigh et al, 2019; Choo et al, 2010; González-Bueso et al, 2018; Hilgard et al, 2013). Accordingly, random reward systems use intermittent reinforcement or the variable ratio system to maintain the behavior (gambling or payment) which seeks more or better rewards, like the addiction cycle studied in slot machines (James et al, 2016; Thomas, 2015; Zack et al, 2014).

This is not the only technique that can be problematic, however. The reinforcement phase, a core element of the cognitive behavioral model (Blaszczynski & Nower, 2002), explains how addictive behaviors are maintained. Cognitive biases such as the sunk cost fallacy (Kahneman & Tversky, 1979), and the illusion of control (Langer, 1975), are prevalent in video game monetization strategies. Loss aversion theory suggests that people experience loss more intensely than an equivalent gain (Kahneman & Tversky, 1979). Such a principle is often used in the design of gambling games and platforms (Adams et al., 2018; Bandeira Romao Tome, 2021). Similarly, the illusion of control is a psychological phenomenon whereby people believe that the outcomes of events that are random or determined by chance can be influenced or controlled (Langer, 1975). This phenomenon has been studied extensively in the context of video games by using positive feedback through lights and animations, decision making, the use of complex game systems that give a false sense of skill, as well as progression and reward systems. These systems create a false sense of control over the outcome,

in that players believe that the quality of the reward is dependent on the time spent playing or user ability, when in actuality it is predetermined or random (Carrasco, 2023; Polak & Chodzyńska, 2020).

Modern monetization strategies in video games are carefully designed to act as external triggers that engage players. Psychological mechanisms, like the fear of missing out (FOMO), are central to systems such as battle passes, where time-limited rewards create urgency (Hayran et al., 2020). Additionally, competitive systems, such as ranking boards or exclusive cosmetic items, amplify social pressures and push players to participate more actively, often at financial expense (Buglass et al., 2017; Conroy et al., 2021). In this area, some studies have drawn attention to the relevance of FOMO in explaining trends in social network-related consumption, especially over the last decade (Parveiz et al., 2023). FOMO is a psychosocial phenomenon that has been widely studied in relation to social media use and its impact on various aspects of people's daily lives and well-being (Buglass et al., 2017). Some authors relate this psychosocial phenomenon to some of the behaviors associated with pathological gambling (Dossey, 2014; Gökçearsan et al., 2023; Li et al., 2021). Promotional messages and communication strategies are designed to maximize player engagement and spending by exploiting their fear of missing out on exclusive content or special events (Hodkinson, 2019).

Otherwise, the components model of addiction identifies six core elements that define addictive behaviors: salience, mood modification, tolerance, withdrawal, conflict, and relapse (Griffiths, 2005). Several of these components are particularly relevant in the context of video game monetization (Schimmenti, 2023; Sifri, 2022). Monetization practices, such as battle passes and season passes, can take on significant importance in players' lives, shaping their routines and becoming a dominant activity (Joseph, 2021). This is especially evident in the time-sensitive nature of battle passes, where daily engagement is required to unlock rewards, leading to patterns of habitual gaming (Ahonen, 2022).

Players often also face internal and external conflicts due to these monetization strategies. Internally, they may grapple with the decision to spend money or lose progress in the game. Externally, this conflict can extend to social relationships or financial strain caused by excessive spending (Zendle & Petrovskaya, 2020). Over time, players may require increased engagement or spending to achieve the same level of satisfaction (Griffiths, 2005). For instance, initial purchases might feel rewarding, but subsequent transactions may become necessary to maintain the same level of gameplay satisfaction or progression (Joseph, 2021). This aligns with findings showing how monetization systems condition players to normalize spending as part of gameplay (Ahonen, 2022).

The social component of games and its influence on abusive consumption and pathological gambling is also worthy of mention (Setterstrom & Pearson, 2019). Aggressive monetization practices, such as microtransactions and season passes, can be particularly effective in environments where peers value or display possession of exclusive items. Players may feel pressured to spend money in order not to be left behind, or to be accepted within their social group (Charmaraman et al., 2020; King et al., 2019; Király et al., 2018). Group dynamics and peer influence are also essential when establishing social comparison mechanics, such as scoring and ranking systems (Christy & Fox, 2014; Krath et al., 2021; Suls et al., 2002).

Subscription-Based Monetization: Battle Passes and Season Passes

Subscription monetization in video games is a business model in which players pay a recurring fee, usually monthly or annually, for access to the game or exclusive in-game content. This model differs from other approaches, such as one-off, per-game payments or microtransactions, by providing an ongoing revenue stream for game developers and publishers (Flunger et al., 2021). This article focuses on two specific subscription models: battle and season passes. These models have gained space in the industry as two of the main monetization methods in video games (Sowole, 2023) and have normalized in-game payments for a significant part of the gaming community (Markopoulos, 2018; Lehtimäki, 2021).

Numerous studies (Markopoulos, 2018; Lehtimäki, 2021; Sowole, 2023) have approached battle passes from different spectrums, defining them as a monetization model that incentivizes continuous

player engagement through a progressive reward system within a general gamification system (Sowole, 2023). Furthermore, they aim to capitalize on player time and engagement through tiered rewards that require an ongoing investment of time or resources (Joshep, 2021). This is accomplished via a monetization strategy that combines game enjoyment with incentives to spend money by offering exclusive rewards and additional content over the course of a game season (Markopoulos, 2018; Lehtimäki, 2021).

There is no literature available on season passes, however, they can be conceptualized as another monetization system in which a one-off payment allows for the gradual release of a game's content package. It is important to note, although additional content has long been available in paid video games (Sowole, 2023), that this new monetization trend has been transformed by the expansion of its presence in most triple-A games so far available (Joshep, 2021). These new forms of monetization introduce dynamics that have been highlighted as particularly controversial because of their relationship to pathological gambling (Joshep, 2021). In addition, these monetization systems have been analyzed based on further arguments that demonstrate their problematic nature (Markopoulos, 2018; Lehtimäki, 2021).

Passes act as a gateway to introduce players to in-game monetization systems, with research suggesting that initial in-game purchases break an important psychological barrier, making players more likely to make future purchases (Joshep, 2021). This issue has been linked to the commitment and consistency theory (Cialdini, 2007), which suggests that once players have publicly committed to something or taken an initial action, they are more likely to continue to make decisions that validate that previous commitment. In the context of video games, making an initial purchase, such as a battle pass subscription, may lead players to continue spending to remain consistent with their initial commitment (Lindström et al., 2023). This is consistent with findings in the gambling domain, where studies such as Parke et al (2014) have found that wagering small amounts normalizes and facilitates placing larger bets at a future date. By requiring an upfront payment, however small, the player is conditioned to associate certain elements, such as payment details, purchase processes and their overcoming of initial psychological reluctance. Once in, it paves the way for more aggressive monetization (Parke et al, 2014).

This argument relates to the sunk cost fallacy (Arkes & Blumer, 1985), a cognitive bias consisting of irrational, persistent behaviors that attempt to justify and recoup previous investments, even when it would be more rational to abandon them. A player who has paid for a battle pass may feel pressured to continue overplaying and spending on other monetized mechanics out of an irrational desire to maximize and not lose their previous investments (Joshep, 2021; Lehtimäki, 2021; Markopoulos, 2018).

The social system attached to the game—with its relationship with social peer pressure and cosmetic or score improvements as status within the game—must be considered (Charmaraman et al., 2020; King et al., 2019; Király et al., 2018). A player who has acquired a certain status or token membership by purchasing a pass may feel compelled to maintain that categorization through recurring purchases. Otherwise, they risk losing this social capital and the potential, inherent connections and relationships within the community (Yuan et al., 2020). Numerous studies have shown that social interactions and the pressure of group norms are extremely influential on user gaming behavior and motivations (Kou & Nardi, 2013; Yin et al., 2020).

Because of these arguments, battle and season passes play a relevant role, both within the industry itself and in empowering and reinforcing other mechanisms that may increase problematic behaviors related to gambling or overconsumption, despite how neutral they might appear at first glance. It is therefore particularly interesting to analyze these monetization mechanisms, as well as their relationship with other systems and with the ecosystem that gambling generates.

METHODOLOGY

The aim of this research was to analyze monetization systems in video games, focusing on two of the most popular but least studied monetization mechanisms—battle passes and season passes. This study analyzed the key features of these monetization systems, examining their structure, payment models, rewards, and integration into the overall game design (OE1). Additionally, it determined the prevalence of battle passes and season passes in both free-to-play and paid games, exploring their distribution and the patterns with which these monetization systems were employed across different business models (OE2). Furthermore, the study addressed how these monetization mechanisms relate to other forms of monetization, such as loot boxes and in-game purchases that have been investigated for their potential link to risky behaviors, including the risk of developing pathological gaming tendencies (OE3). Finally, the exposure of minors to these monetization systems was examined, using PEGI classifications to explore whether younger players (PEGI 3, 7, 12) were more vulnerable to monetization practices like loot boxes and in-game purchases—factors which may contribute to problematic spending or addictive behaviors (OE4).

This study analyzed a total of 105 PlayStation 5 games to examine the prevalence and characteristics of monetization systems, focusing on battle passes, season passes, loot boxes, and other in-game purchases. The sample was divided into 45 free-to-play games and 60 paid games, which were selected based on their popularity and accessibility within the PlayStation store platform. This platform was chosen due to its diverse catalogue and its global prominence in the gaming industry, providing a representative dataset for the analysis.

The games were first filtered by the most popular downloads, excluding trial versions, and then categorized into two groups: free-to-play games (labelled as “free”), and paid games (labelled by price, ranging from €1 to over €60). The free-to-play games were selected by extracting a list of 45 titles, while the paid games group initially consisted of 3403 titles. From this second group, the top 60 most downloaded paid games were selected, to ensure a variety of business models currently dominating the industry. This approach ensured that the sample reflected a wide range of popular titles, with fully implemented monetization systems, including both free-to-play and paid models. The PlayStation store, as the second most popular gaming platform after mobile phones, offers a significant variety of games, many of which are not available on other platforms such as Steam or Riot Games, which operate independently. The PlayStation store also hosts games from a variety of developers, although some are excluded, such as Riot Games—which has its own platform and is only available for PC. In addition, the Steam platform—which is the most widely used—does not have the original Epic Games titles, while the PlayStation store has the largest number of popular games.

To collect data, each game was played for a minimum of one hour, or until the monetization features were fully accessible. In cases where monetization systems such as passes or loot boxes were available from the start, all features were thoroughly explored during this period. The gameplay sessions followed a structured approach that included familiarization with the game mechanics, identification of monetization features, and simulation of user interactions with these systems.

For each of the games, information was collected on the following categories of items related to the literature on aggressive monetization and pathological gambling (see Table 1): fact sheet (seven items); monetization options (three items); and pass characteristics (13 items). These categories were informed by existing literature on aggressive monetization and pathological gambling. All games were coded using a template to ensure consistency in data collection. Variables such as the presence of loot boxes, the use of in-game currency, and purchase mechanics were systematically documented. Additionally, modes of player interaction, including competitive and cooperative elements, were evaluated, along with progression systems, which were analyzed for their reliance on gradual unlocking, time-limited rewards, or optional payment-based accelerations.

Table 1. Items analyzed in the study

Technical Data	Aggressive Monetization		Pathological Gambling		
	Monetization	Pass	Achievements	Social	Immersion
Game name	Purchase of currency (Yes/No)	Type of pass	Game score measurement (Yes/No)	Interaction with other players (Yes/No)	Customizability
Distributor	Acquisition of in-game items (customization/upgrades/both/none).	Prize (Euros)	Presence of qualifying competition rankings (Yes/No)	Type of interaction in the game (cooperative/competitive/both).	Presence of events
Gender	Presence of mechanics associated with loot boxes (Yes/No)	Rewards offered (upgrades, customization/currency)	Gradual progression (Yes/No)		Narrative
PEGI		Evaluation of the number and variety of rewards offered			
PS5 ranking position		Rewards available without purchasing the pass			
Available platforms		Accelerated progress option (Yes/No)			

Note. Source: own elaboration, 2024; PEGI = Pan European Game Information; PS5 = Play Station 5

Additionally, characteristics related to pathological gambling (eight items) were analyzed. In addition to monetization strategies, other features of the games were identified that could contribute to the development of pathological gambling behavior, as defined by the diagnostic criteria in the Diagnostic and Statistical Manual of Mental Disorders (American Psychiatric Association, 2022). Three main components of user motivation, as associated with pathological gaming, were identified: achievement (desire to progress quickly), social component (chatting and interacting with other players), and immersion component (discovering new things about the game, creating one's own character and story, escapism, and problem avoidance). Although economic investment and these factors were crucial, other relevant variables were examined, including the measurement of success (three items), the social component (two items) and immersion (three items).

In addition, a detailed analysis of the different passing systems implemented in a wide range of video games was carried out. As a result, the battle pass and the season pass were identified and categorized. For the purposes of this research, both categories were adopted, as they matched the general perception in the gaming community.

LIMITATIONS

While this study provided a comprehensive analysis of the prevalence and features of battle passes and season passes in free-to-play and paid games, it had several limitations that should be acknowledged. First, the study focused solely on PlayStation 5 games, which may not represent the full spectrum of gaming platforms. Other platforms, such as PC and mobile games, could have had different monetization trends that were not explored here. This limits the generalizability of the findings to a broader gaming population.

Second, the study concentrated on popular games, which were selected based on their visibility and download rates on the PlayStation store. This approach excluded lesser-known or indie games that may use different monetization strategies, potentially skewing the results toward the more mainstream practices. Future research could expand the sample to include a broader range of games, ensuring a more diverse representation of monetization models across the gaming industry.

Third, the study relied on a quantitative approach to analyze in-game monetization features, but did not include player perspectives or behavioral data, such as surveys or interviews. Incorporating qualitative methods would provide a deeper understanding of how players perceive and respond to these monetization systems, offering valuable insights into the psychological and social impacts of battle and season passes.

Finally, while the study identified significant trends in monetization practices and their connection to potential addictive behaviors, it did not address the long-term effects of these practices on players. Future studies could focus on longitudinal data to assess whether continuous exposure to these monetization systems contributes to sustained patterns of spending and problematic gaming behavior over time.

RESULTS

Characterization of Key Features of Battle and Season Passes

As previously mentioned, a description of the different passes was conducted for later categorization. This classification aligned with the perceptions of the gaming community and video game press. Both types of passes were categorized, based on a series of essential features (see Table 2).

Table 2. Comparison of passes

Pass	Temporality	Rewards	Payment	Playability
Battle	Temporary	Progressive	Periodic	Active
Season	Permanent	Immediate	Single	Passive

Note. Source: own elaboration, 2024.

According to our data, the general prevalence of passes was 51.65%, with the battle pass being the most common, with a prevalence of 27.47%, followed by the season pass at 21.98%. Combined passes (both battle pass and season pass) were quite rare, with only 2.20%.

Regarding the prices of these systems (see Table 3), most battle passes were priced around €9.99, as both the median and mode were at this value. The relatively low standard deviation (€2.67), suggested that the prices of battle passes were more uniform and did not vary significantly. Season passes tended to be more expensive, with an average price of €31.49. The mode of €39.99 indicated that this was the most common price, but there was greater variability in the prices (as reflected by the standard deviation of €9.33), suggesting that some season passes could be significantly more expensive than others.

Table 3. Descriptive statistics of rewards for battle pass and season pass

Pass type	Mean	Median	Mode	Standard deviation
Battle pass	100,96	100,00	100,00	62,14
Season pass	85,00	85,00	70,00	21,21

Note. Source: own elaboration, 2024.

Regarding the rewards offered by the passes (see Table 4), most battle passes offered between 100 and 103 rewards. The high standard deviation (62.14) indicated significant variability in the number of rewards. Season passes tended to offer fewer rewards, with an average of 85 rewards. The mode of 70 rewards suggested that this was the most common number of rewards. The standard deviation (21.21) was lower than that of battle passes, indicating less variability in the number of rewards offered by season passes.

Table 4. Descriptive statistics of prizes for battle pass and season pass

Pass Type	Mean	Median	Mode	Standard Deviation
Battle pass	9,09 €	9,99 €	9,99 €	2,67 €
Season pass	31,49 €	29,99 €	39,99 €	9,33 €

Note. Source: own elaboration, 2024.

Determining the Prevalence of Battle Passes and Season Passes in Free-to-Play and Paid Games

In the sample of free-to-play games, the most common monetization system was the battle pass, present in 64.52% of the games. Interestingly, none of the free-to-play games analyzed included a season pass. This suggests that free-to-play games primarily relied on battle passes as their main monetization strategy. On the other hand, in the paid games, the situation was different. Most of these games (55%) did not have any form of pass at all, while 33.33% had a season pass. A small percentage (3.33%) of paid games used combined passes—a combination of both battle passes and season passes. To assess whether these differences were statistically significant, a chi-square test was performed. The chi-square value was 36.46, with a $p < 0.05$. This strongly indicated that there were significant differences in the prevalence of pass types between free-to-play and paid games. In other words, the type of game (whether free-to-play or paid), was strongly associated with the presence of battle passes and season passes.

Establishing the Relationship With Other Types of Monetization (Associated With the Risk of Addictive Behaviors)

The study found that 100% of free-to-play video games, including battle passes ($n=25$), allowed virtual currency to be purchased with real money. Loot boxes were a common feature, present in all games rated PEGI 3, 16, and 18, but were less common in PEGI 7 and 12 games. The purchase of in-game upgrades with real money was found in 55% of games, particularly in those rated PEGI 12 and 16 (see Table 5).

Table 5. Descriptive statistics of monetization by pan European game information groups in free-to-play games

	PEGI 3		PEGI 7		PEGI 12		PEGI 16		PEGI 18	
	%	n = 3	%	n = 4	%	n = 3	%	n = 7	%	n = 3
Loot box	100	3	50	2	33	1	100	7	100	3
Buying upgrades with real money	33	2	25	1	66	2	85	6	0	0

Note. PEGI = Pan European Game Information.

In paid games with season passes, 100% of games included the option to purchase virtual currency with real money. These games also demonstrated a high incidence of loot boxes, particularly in games rated PEGI 18, and primarily focused on customization, virtual currency, and DLCs (see Table 6).

Table 6. Descriptive statistics of monetization by pan European game information groups in paid games

	PEGI 3		PEGI 12		PEGI 16		PEGI 18	
	%	n = 4	%	n = 6	%	n = 4	%	n = 12
Loot box	50	2	67	4	25	1	89	8
Buying upgrades with real money	50	2	50	3	25	1	75	9

Note. PEGI = Pan European Game Information.

The analysis explored the relationship between the type of pass available in games (battle pass, season pass, or no pass), and the presence of risky monetization practices, such as loot boxes and currency purchases. The findings suggest that the type of pass was associated with variations in the inclusion of certain monetization mechanics². For instance, games with specific types of passes appeared more likely to incorporate features enabling players to spend real money on in-game upgrades or obtain randomized rewards. Additionally, the study examined the association between PEGI classification and the prevalence of different monetization mechanics. The results indicated no observable patterns or significant relationships linking PEGI ratings to the inclusion of specific monetization features³.

In the study of paid video games with season passes ($n=27$), distinct patterns of monetization were observed, through the purchase of currency with real money—these varied according to the PEGI classification of the games. 50% of PEGI 3 and PEGI 12 games offered this option, while only 25% of PEGI 16 games and 75% of PEGI 18 games included it. Loot boxes were most prevalent in PEGI 18 games (89%), and less common in PEGI 16 (25%), and PEGI 3 games (50%).

In free-to-play games, 52% battle passes were self-funded, with rewards that covered the purchase of the next battle pass. Less than half of the rewards were free in 68% of these games, while 48% of the passes included elements that affected gameplay (see Table 7).

Table 7. Presence of gameplay-modifying enhancement rewards according to pan European game information

PEGI 3		PEGI 7		PEGI 12		PEGI 16		PEGI 18	
%	n = 3	%	n = 4	%	n = 3	%	n = 7	%	n = 3
67	2	25	1	67	2	80	5	67	2

Note. PEGI = Pan European Game Information.

The option to pay to progress faster through the contents of the battle pass was available in 72% of games (see Table 8).

Table 8. Presence of “rapid enhancement” according to pan European game information

PEGI 3		PEGI 7		PEGI 12		PEGI 16		PEGI 18	
%	n = 3	%	n = 4	%	n = 3	%	n = 7	%	n = 3
67	2	100	4	100	3	24	6	100	3

Note. PEGI = Pan European Game Information.

In paid games, battle passes were generally not self-financing, with only 40% offering free rewards. Only 20% of these games included gameplay-modifying upgrades, which was lower than in the free-to-play games. All paid games offered the option to pay for faster progression through the battle pass levels.

In the study of season passes in paid games ($n=22$), a classification was made based on the system of operation and the rewards offered by each type of pass. This classification was divided into three main categories, and the distribution of these passes according to PEGI ratings (see Table 9). The categories identified are thematic packs⁴, annual packs⁵ and expansion packs⁶.

Table 9. Distribution of season passes by pan European game information

	PEGI 3		PEGI 12		PEGI 16		PEGI 18	
	%	n = 3	%	n = 6	%	n = 4	%	n = 7
Annual	66,66	2	50	3	50	2	0	0
Expansion	33,33	1	50	3	25	1	85,71	6
Thematic	0	0	16,66	1	25	1	14,29	1

Note. PEGI = Pan European Game Information.

Battle passes in free-to-play games were designed to integrate goals and competition, with 100% featuring achievement items and scoring systems. Progress in these games was sequential, with all offering level advancement. Less than half (47.6%) allowed a quick start battle pass, while some required tutorials or prior progress. Interaction between players was fundamental, with a predominance of the competitive aspect (66.66%) (see Table 10).

Table 10. Distribution of interaction by pan European game information

	PEGI 3		PEGI 12		PEGI 16		PEGI 18	
	%	n = 4	%	n = 6	%	n = 7	%	n = 3
Competitive	75	3	50	3	100	7	0	0
Cooperative	0	0	0	0	0	0	0	0
Both	25	1	50	3	0	0	100	3

Note. PEGI = Pan European Game Information.

All paid games with battle passes had scoring and ranking systems, progressive advancement, and quick head start. This allowed interaction between players, mostly of the

competitive kind. Season passes in these games showed that most had scoring and rankings; interaction was common, with predominantly competitive and some mixed games. Customization and events associated with passes were present in all, with richer narratives in games with expansion packs.

CONCLUSIONS

The findings of this study suggest that battle passes and season passes are two significant monetization systems that are deeply ingrained in the business models of both free-to-play and paid games. The analysis showed that free-to-play games tended to rely more heavily on battle passes, while paid games feature a wider range of monetization options, including season passes. The presence of variable rewards in battle passes and the pressure to complete levels could be seen as a clear example of how “reinforcement cognition” was activated, as described in the cognitive behavioral model (Błasczynski & Nower, 2002). Results from this study showed that 64% of free-to-play games with battle passes included the option to buy upgrades. This finding supports the hypothesis that progression mechanics and constant rewards can encourage continuous spending, a phenomenon that aligns with the components model of addiction, where the sunk cost fallacy plays a crucial role in making players feel compelled to continue to justify their initial investments.

Furthermore, the study showed that 100% of the games surveyed allowed the purchase of virtual currency with real money and that loot boxes were widespread, especially in games aimed at minors (50% in PEGI 3 and 67% in PEGI 7 for paid games). This result supports the literature on the normalization of in-game purchases and their impact on consumer behavior (Joseph, 2021), illustrating how the constant availability of virtual currency and loot boxes introduces players to a monetized gaming environment, which normalizes spending and potentially leads to problematic gaming behavior. The seasonality of battle passes, typically quarterly, may create a sense of urgency, or FOMO, thereby encouraging excessive gaming and spending.

The data did not show any evidence of purchases with real-money upgrades that directly affected gameplay in paid games with season passes. This suggests a different monetization strategy, compared with free-to-play games. Real-money purchases in these paid games focused on customization items, virtual currency and DLCs, or game expansions. In fact, almost half of the free-to-play games analyzed (48%) featured gameplay modifications, compared with only 20% of the paid games. Moreover, in this second category, most of the gameplay enhancements occurred in annual packs (66.66% of the annual packs analyzed contained gameplay enhancements), or in themed packs (which, by definition, modify the game). It is also important to understand that this dynamic was most present in games aimed at minors: 100% of games for PEGI 3, and 75% of games for PEGI 16.

The illusion of control created by incremental progression in battle rounds can be misleading, as players may perceive that the rewards they earn are a direct reflection of their skill and effort, when in fact the outcomes are often predetermined (King et al., 2019). Achievement systems (present in 100% of the games analyzed), and ranking systems (present in 95.23% of free-to-play games and 100% of paid games), encourage this sense of engagement with the game and the illusion of control over the game. This connects with Langer’s (1975) “illusion of control” cognitive bias, where players believe they can influence random or chance events, such as rewards, by spending more time or money on the game.

This dynamic is exacerbated by the “fast-forward” option offered by many games (100% of paid games and 72% of free-to-play games allowed fast-forwarding for money), allowing players to pay to accelerate their progress. This mechanism is underpinned by two cognitive biases: commitment and consistency theory. These biases cause psychological pressure to maintain previous investments (Cialdini, 2009), along with the sunk cost fallacy, which drives players to consume more resources in the game—not necessarily for enjoyment, but to recoup their initial investment (Joseph, 2021; Lehtimäki, 2021; Markopoulos, 2018). These cognitive biases drive players to continue investing in the game, as seen in the fast-forward options, reinforcing the psychological commitment to the game.

Therefore, passes, whether battle or seasonal, play a very important role in allowing player behavior to be determined by the biases, not only because they allow them to pass the initial threshold of making a first in-game transaction, but also because they are combined with other monetization mechanisms that can reinforce the effect of these cognitive biases.

In terms of associated risks, battle passes in paid games require a higher initial financial investment and often ongoing purchases to maintain access to rewards. In this study, less than half of the available rewards (40%) could only be obtained with the corresponding battle pass, with 20% of the paid rewards having the ability to modify gameplay. This meant a greater financial investment in the game, as well as a greater commitment to the game. These first two outlays can massively increase the frustrations associated with battle passes in free-to-play games. In addition, these games showed a lower presence of self-maintenance of battle passes (52% of battle passes were self-maintained), which implies an even greater economic investment in the game, as the rewards obtained through playing did not allow for the acquisition of successive versions of the pass but required new economic outlays. This dynamic is particularly worrying given the demographic segmentation of games, which shows that a significant proportion (74.04%) are aimed at minors and 44.44% at children, a group particularly vulnerable to monetization tactics such as those outlined above.

However, while PEGI classifications revealed a higher occurrence of monetization systems in games intended for younger audiences, no significant correlation was found between the age rating and the presence of battle passes, season passes, or loot boxes. This suggests that PEGI ratings are not a reliable indicator of the inclusion of these monetization practices. Nonetheless, the increased prevalence of these systems in games targeted at children presents a risk, as they are more susceptible to these dynamics, thereby heightening the likelihood of young gamers developing associated pathologies (Rosendo-Rios et al., 2022).

Season passes offer a different model, although one that is not exempt from aggressive monetization strategies, including: the possibility of acquiring virtual currency through real transactions (in 100% of games); a notable prevalence of loot box systems, particularly in games aimed at young audiences (50% in PEGI 3 AND 67% in PEGI 7); and the offer, albeit to a lesser extent than in battle passes, of paid gameplay enhancements (20% of season passes included paid rewards that modified gameplay). While they require an initial purchase of the game and pass, the rewards offered are not directly linked to continued activity in the game.

The impact of these strategies varies depending on the type of season pass. Thematic packs are associated with more aggressive monetary practices, as their content is always additional and modifies gameplay, increasing the risk of gamification and affecting social status and interaction between players. Although annual packs use similar monetary tactics to battle passes, their one-off payment model for annual access reduces the overall investment, however, this does not significantly mitigate gamification risks as they retain all the features discussed in battle passes. Expansion packs are less risky because additional content, usually in the form of DLC, is not associated with excessive monetization.

Overall, the study provided valuable insights into the prevalence, pricing, and features of battle passes and season passes, and their association with other monetization practices. The findings emphasized the need for further research into the long-term impact of these systems, particularly in terms of their potential to influence player behavior and contribute to problematic gaming.

Need for Regulation of Aggressive Monetization Practices

Given the significant role that battle passes and season passes play in the current monetization strategies of both free-to-play and paid games, it is crucial to consider regulatory measures to protect players, particularly vulnerable groups such as minors. The study highlights how these systems often leverage cognitive biases, such as the sunk cost fallacy and the illusion of control, to drive continuous spending and gaming engagement. As observed, the aggressive use of mechanisms like loot boxes, virtual currency purchases, and the fast-forward options not only normalizes in-game spending, but

also contributes to the risk of developing pathological gambling behaviors (Joseph, 2021; King et al., 2019; Lehtimäki, 2021).

Considering these findings, there is a pressing need for regulations that ensure greater transparency in these monetization systems. Specifically, game developers should be required to disclose the true costs associated with these monetization models, including the odds of receiving specific rewards and the potential long-term financial commitment required to fully enjoy the game (European Parliament, 2023). Moreover, stricter age restrictions and more robust parental controls should be implemented to safeguard younger audiences from being exposed to these addictive practices (Joseph, 2021; King et al., 2019). As the European Parliament (2023) and consumer protection advocates have suggested, it is essential to create regulatory frameworks that prevent excessive spending, particularly in games targeted at minors, and provide players with clear, accessible information on how monetization works.

While regulation cannot fully eliminate the financial incentives tied to these practices, it can mitigate the harmful effects by creating an environment where players are better informed and have more control over their spending habits. This would not only contribute to the protection of players, but also encourage the gaming industry to adopt more ethical and responsible monetization strategies that prioritize player well-being over profit (Joseph, 2021; King et al., 2019).

COMPETING INTERESTS

The authors of this publication declare there are no competing interests.

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ENDNOTES

- ¹ Pathological gambling, or gambling disorder, is an impulse control disorder marked by persistent and maladaptive gambling behavior that disrupts personal, family, and work life, leading to significant financial and emotional distress (American Psychiatric Association, 2013). In contrast, a gaming disorder involves an addiction to video games, characterized by impaired control over gaming and prioritizing gaming over other activities, despite negative consequences (see the *International Classification of Diseases (ICD)*, sf.). While both disorders share compulsive behavior traits, they differ in their triggers: gambling activities for gambling disorder and video games for gaming disorder (American Psychiatric Association, 2013; World Health Organization, 2018).
- ² The ANOVA test conducted to assess differences in risky monetization practices between games with battle passes, season passes, and no passes yielded a statistically significant result ($F = 3.89, p = 0.0241$). This indicates that the type of pass influences the presence of monetization practices such as loot boxes or real-money currency purchases.
- ³ The Chi-square test assessing the relationship between PEGI classifications and monetization mechanics did not reveal statistically significant differences. Details of the Chi-square values (χ^2) and p -values for monetization types are as follows: battle pass ($\chi^2 = 3.67, p = 0.45$); season pass ($\chi^2 = 6.68, p = 0.15$); Loot box ($\chi^2 = 3.04, p = 0.55$); currency purchase ($\chi^2 = 6.29, p = 0.18$).
- ⁴ These season passes are characterized by offering multiple rewards grouped in batches during specific periods. These rewards can include a variety of content such as characters, customizations and maps, among others. 19.04% of the analyzed season passes fall into this category.
- ⁵ This type of season pass gives players access to all additional content in the game for approximately one year. This includes DLC (downloadable content), new characters, customizations, maps, and other content, both existing and to be released that year. 38.09% of the season passes analyzed fell into this category.
- ⁶ These season passes focus on offering all available DLCs as additional content for the game. They can come in the form of a single batch or multiple batches, and their main purpose is to add additional downloadable content to the game. 42.85% of the season passes analyzed fall into this category.