

# Micro-Transactions in Online Video Games: An Analysis of Monetisation Strategies and Their Psychological and Ethical Implications

**Dr. Ranjith Somasundaran Chakkambath<sup>1</sup>, Dr. Shamsi Sukumaran<sup>2</sup>, Ammaar Nazim<sup>3</sup>**

<sup>1</sup>Asst. Professor, AMITY KOCHI, Ernakulam, Kerala, India

<sup>2</sup>Asst. Dean, AMITY KOCHI, Ernakulam, Kerala, India

<sup>3</sup>BBA Student, AMITY KOCHI, Ernakulam, Kerala, India

## Abstract

*The video game industry has undergone a significant transformation with the adoption of micro-transactions as a key monetisation strategy. Micro-transactions enable players to purchase virtual goods, cosmetic items, battle passes, and other in-game content, providing game developers with continuous revenue streams beyond traditional game sales. While these systems have contributed to the financial growth of the gaming industry, they have also generated concerns regarding consumer spending behaviour, psychological influences, fairness, and ethical practices. This study examines micro-transactions in online video games and evaluates their psychological and ethical implications for players. A descriptive research design was employed, using both primary and secondary data sources. Primary data were collected through a structured questionnaire administered to 120 video game players selected using a convenience sampling method based on accessibility and willingness to participate. Secondary data were obtained from academic journals, industry reports, market statistics, and scholarly publications related to gaming monetisation and consumer behaviour. The collected data were analysed using descriptive statistical techniques, including frequency distribution, percentage analysis, cross-tabulation, tables, and charts. The findings revealed high levels of awareness and participation in micro-transactions among gamers. Cosmetic items and battle passes emerged as the most popular purchases, while visual appeal, limited-time offers, and curiosity were identified as major spending motivations. The study also found evidence of impulse buying behaviour, concerns regarding fairness, perceptions of loot boxes as gambling-like mechanisms, and strong support for stricter regulatory measures. The study contributes to a better understanding of the business, psychological, and ethical dimensions of micro-transactions and provides insights for game developers, policymakers, and researchers seeking to promote responsible and consumer-friendly monetisation practices in the gaming industry.*

**Keywords:** *Micro-Transactions, Video Games, Monetisation, Consumer Behaviour, Psychological Implications, Ethical Concerns, Loot Boxes, Gambling, Regulation*

## 1. INTRODUCTION

The global video game industry has evolved into one of the largest and fastest-growing segments of the entertainment sector, with revenues surpassing those of the film and music industries combined. Traditionally, video games were sold as complete products through physical retail channels, where consumers paid a one-time purchase price for a finished product. However, the advancement of digital distribution, online connectivity, and mobile gaming has fundamentally altered this business model.

The emergence of micro-transactions has redefined how companies generate revenue in the digital gaming economy. Micro-transactions refer to small financial transactions within a video game that allow players to purchase virtual items or enhancements. These may include cosmetic skins, character upgrades, virtual currency, expansion packs, and randomised reward systems known as loot boxes. This monetisation model is particularly prominent in free-to-play games, where the base game is offered at no cost while revenue is generated through optional in-game purchases.

Major industry players such as Activision Blizzard, Electronic Arts, and Epic Games have integrated micro-transaction systems into their business strategies, generating recurring digital revenue that often surpasses traditional game sales. According to industry reports, in-game purchases represent a significant share of global gaming revenue, particularly in mobile and online multiplayer segments (Newzoo, 2023). The freemium model has reduced entry barriers for consumers while creating continuous revenue streams for firms, improving customer lifetime value, and supporting long-term content updates.

While micro-transactions have proven financially successful, they have also sparked considerable debate among researchers, policymakers, and consumers. Critics argue that certain monetisation practices exploit psychological vulnerabilities and blur ethical boundaries, especially when randomised rewards and limited-time offers are involved (Xiao, 2023a). As a result, regulators and consumer protection agencies in various jurisdictions have begun evaluating the fairness and transparency of these systems. This transformation presents an important area of study for business and management scholars, as it highlights the intersection of revenue strategy, consumer behaviour, and corporate ethics in the digital economy.

### **1.1 Statement of the Problem**

The rapid growth of the video game industry has led to the widespread adoption of micro-transactions as a major monetisation strategy, particularly in free-to-play and online games. While these systems generate substantial revenue for game developers through the sale of virtual items, cosmetics, battle passes, and loot boxes, concerns have emerged regarding their influence on consumer spending behaviour, psychological wellbeing, and perceptions of fairness. Features such as impulse purchase triggers, limited-time offers, and randomised rewards may encourage excessive spending and raise ethical questions, especially among younger and vulnerable players. Despite the increasing prevalence of micro-transactions, there remains a need to better understand how players perceive these monetisation practices and how such systems affect their purchasing decisions and gaming experiences. Therefore, this study seeks to examine the role of micro-transactions in the gaming industry and evaluate their psychological and ethical implications from the perspective of video game players.

### **1.2 Research Objectives**

1. To examine the role of micro-transactions as a monetisation strategy in the video game industry and analyse players' awareness, spending behaviour, and purchase motivations.
2. To evaluate the psychological and ethical implications of micro-transactions on players, including impulse buying behaviour, perceptions of fairness, gambling-related concerns, and the need for regulatory intervention.

### **1.3 Scope of the Study**

This study focuses on micro-transactions within online and digital video games across global markets. It examines monetisation models, behavioural influences, and ethical discussions but does not include technical game development processes. The analysis incorporates both primary data collected from video game players and secondary research from academic journals, industry reports, and publicly available company information. The study specifically examines

consumer perceptions, spending behaviour, and attitudes towards regulation, with particular attention to loot boxes, probability disclosures, and the protection of vulnerable players.

### **1.4 Significance of the Study**

Understanding micro-transactions is essential for modern business education because they illustrate how digital firms leverage behavioural economics to drive revenue. This study contributes to discussions in strategic management, marketing, and business ethics by examining how firms balance profitability with responsible corporate conduct. The findings provide insights for game developers, policymakers, and consumers regarding the design, regulation, and impact of micro-transaction systems. Additionally, the study contributes to the growing body of literature on digital business models and consumer protection in the gaming industry.

### **1.5 Limitations of the Study**

This study is subject to certain limitations that should be considered when interpreting the findings. First, the research was conducted within a limited geographic area, which may not fully represent the views and experiences of video game players from different regions or cultural backgrounds. Second, the study relied on a sample of 120 respondents, which, although adequate for academic research, may restrict the generalisation of the results to the broader gaming population. Additionally, the findings are based on self-reported responses, which may be influenced by personal bias, inaccurate recall, or respondents' tendency to provide socially desirable answers. The study was also completed within a limited academic timeframe, restricting opportunities for more extensive data collection and deeper analysis. Finally, as the research adopted a cross-sectional approach, it captured participant opinions and behaviours at a single point in time and did not examine how attitudes toward micro-transactions may evolve over the long term.

## **2. LITERATURE REVIEW**

The literature review examines existing research on micro-transactions in video games, with particular emphasis on monetisation strategies, psychological influences on spending behaviour, ethical concerns, and regulatory responses adopted by governments and industry stakeholders.

### **2.1 Micro-Transactions as a Monetisation Strategy**

Micro-transactions have become a central component of contemporary video game business models. Kovsca, Lackovic Vincek, and Tkalcec (2023) observed that the gaming industry has increasingly adopted consumer-oriented monetisation models, particularly free-to-play systems that allow players to access games with little or no upfront cost while generating revenue through optional in-game purchases. Their study highlighted how micro-transactions have transformed the economic structure of the gaming industry across console, PC, and mobile platforms, contributing significantly to long-term revenue generation and player engagement. Similarly, Amano and Simonov (2024) examined spending behaviour associated with loot boxes and found that revenue generation is heavily concentrated among a small segment of high-spending players, commonly referred to as "whales." Using behavioural data from a large mobile game, the authors showed that a small percentage of players accounted for the vast majority of loot-box revenue. They further argued that while most players purchase loot boxes for in-game utility, high-spending users often derive value from the gambling-like uncertainty embedded in these systems. This finding highlights the commercial effectiveness of loot boxes while raising concerns regarding consumer welfare.

The evolution of monetisation strategies has also led to the emergence of battle passes as an alternative to traditional loot-box systems. Petrovskaya and Zendle (2023) investigated battle passes in the popular game *Dota 2* and found that although these systems generate substantial revenue, they do not necessarily increase purchasing participation among players. Their research revealed mixed player perceptions, with some appreciating the additional rewards and progression opportunities while others criticised issues related to fairness and accessibility. The findings suggest that

although battle passes may be viewed more positively than loot boxes, concerns regarding monetisation practices remain prevalent among gaming communities.

## **2.2 Psychological Mechanisms in Consumer Spending**

The psychological factors underlying micro-transaction spending have received considerable attention in recent research. Gibson et al. (2024) found that players motivated by external rewards and social influences were more likely to engage frequently with micro-transactions and demonstrated stronger associations with problematic gaming and gambling behaviours. Their study suggested that spending behaviour may be influenced by a combination of reward-seeking tendencies, social comparison, and the desire for status within gaming communities.

Research by Rita, Guerreiro, Ramos, and Caetano (2024) further demonstrated that micro-transactions can stimulate impulse buying behaviour. The authors reported that performance-related benefits, hedonic enjoyment, and social influences significantly increased both impulse purchases and purchase intentions among gamers. The study also highlighted the role of "flow experience," whereby highly engaged players become deeply immersed in gameplay and are consequently more likely to make spontaneous purchasing decisions. Ethical and psychological concerns associated with micro-transaction systems have also been explored from a consumer rights perspective. Sánchez-Adame et al. (2023) argued that many micro-transaction systems incorporate engagement mechanisms designed to maximise user spending, often through behavioural triggers, progression incentives, and personalised offers. Their ethical framework emphasised the need for greater attention to user autonomy, fairness, and transparency in digital monetisation practices. The authors noted that excessive reliance on such mechanisms may disproportionately affect younger and more vulnerable players.

## **2.3 Ethical Concerns and Regulatory Responses**

The ethical implications of video game monetisation have become a major topic within academic and policy debates. Garea et al. (2023) investigated the relationship between loot-box spending and psychological vulnerabilities through a cross-national survey involving participants from New Zealand, Australia, and the United States. Their findings revealed positive associations between loot-box expenditure, obsessive-compulsive symptoms, hoarding tendencies, and consumer regret. The study concluded that certain groups of players may be particularly susceptible to excessive spending, reinforcing concerns regarding psychological harm and consumer protection.

Substantial evidence has also emerged linking loot boxes to gambling-related risks. Xiao et al. (2024) found a significant positive relationship between loot-box spending and problem gambling behaviours in a large-scale survey conducted in China. The study supported earlier international findings suggesting that loot boxes share important structural and psychological similarities with gambling, thereby warranting greater regulatory scrutiny and consumer safeguards.

Regulatory responses to loot boxes have varied considerably across countries. Xiao (2023) examined Belgium's attempt to regulate loot boxes through gambling legislation and reported that enforcement challenges limited the effectiveness of the policy, with many games continuing to offer loot-box mechanics despite legal restrictions. In related studies, Xiao and colleagues found inconsistent compliance with industry self-regulation measures such as loot-box warning labels and probability disclosures. These findings suggest that voluntary self-regulatory approaches may be insufficient to protect consumers effectively. Governments may therefore need to implement stronger legal frameworks and monitoring systems to ensure compliance and transparency in digital gaming markets.

The broader ethical implications of gambling-like features in gaming environments have also been highlighted in recent reviews. Mattinen, Macey, and Hamari (2023) observed a growing convergence between gaming and gambling, particularly through mechanics such as loot boxes. Their review concluded that while these systems provide substantial financial benefits to developers, they simultaneously raise concerns regarding player wellbeing, consumer exploitation, and the normalisation of gambling-like behaviours among younger audiences. Similarly, Sánchez-Adame et al. (2023) proposed that future micro-transaction systems should be evaluated using ethical principles centred on motivation, engagement, and fairness to ensure that commercial objectives do not undermine player welfare

### 3. RESEARCH METHODOLOGY

The study adopted a descriptive research design to examine micro-transactions in online video games as a monetisation strategy and to evaluate their psychological and ethical implications for players. Both primary and secondary data were used to achieve the research objectives. Primary data were collected through a structured questionnaire administered to video game players who were familiar with in-game purchases, while secondary data were obtained from academic journals, industry reports, market statistics, and scholarly publications related to gaming monetisation and consumer behaviour. The study focused on players of online, PC, console, and mobile games that incorporate micro-transaction systems. A convenience sampling method was employed to select respondents based on their accessibility and willingness to participate. Using this non-probability sampling technique, a sample of 120 respondents comprising college students, young adults, and casual gamers was chosen for the study.

The questionnaire gathered information on awareness of micro-transactions, spending behaviour, purchase motivations, psychological influences, and perceptions regarding fairness, regulation, and gaming experience. The collected data were analysed using descriptive statistical techniques such as frequency distribution, percentage analysis, tables, charts, and cross-tabulation to identify patterns and relationships among variables. The findings were interpreted to understand consumer attitudes, spending habits, and behavioural tendencies associated with micro-transactions. In addition, thematic analysis was applied to the secondary data to identify key themes related to monetisation strategies, psychological triggers, ethical concerns, and consumer protection, thereby providing a comprehensive understanding of the impact of micro-transactions in the gaming industry.

### 4. RESULTS AND DISCUSSION

#### 4.1 Demographic Characteristics

Demographic Variable	Category	Frequency	Percent
Age	Below 18	18	15
	18-21	52	43.3
	22-25	34	28.3
	Above 25	16	13.3
Gender	Female	38	31.7
	Male	72	60
	Prefer not to say	10	8.3
Frequency of Playing	Daily	48	40
	Weekly	37	30.8
	Occasionally	25	20.8
	Rarely	10	8.3
Total		120	100

**Table 1. Demographic Profile of Respondents**

Source: Survey Data

The age distribution revealed that the majority of respondents were aged 18-21 years (43.3%), followed by those aged 22-25 years (28.3%). Respondents below 18 years constituted 15.0%, while those above 25 years represented 13.3% of the sample. This distribution suggested that young adults formed the largest segment of video game players in the

sample, which aligned with industry data indicating that younger demographics are the most active participants in gaming and micro-transaction systems.

Regarding gender, males constituted the majority of respondents (60.0%), while females accounted for 31.7%. A small proportion (8.3%) preferred not to disclose their gender. This gender distribution reflected the general trend observed in gaming demographics, though female participation was notably significant.

In terms of gaming frequency, the largest proportion of respondents played video games daily (40.0%), followed by weekly players (30.8%). Occasional players accounted for 20.8%, while only 8.3% played rarely. This high frequency of play indicated that the sample consisted of committed gamers who likely had substantial exposure to micro-transaction systems.

#### 4.2 Awareness and Spending Behaviour

Variable	Response	Frequency	Percent
Awareness of Micro-transactions	No	18	15
	Yes	102	85
Experience with In-Game Purchases	No	36	30
	Yes	84	70
	Never	24	20
	Rarely	32	26.7
Frequency of Spending	Sometimes	46	38.3
	Very Often	18	15
	Battle Passes	48	40
Types of Purchases	Cosmetic Items	64	53.3
	Loot Boxes	8	6.7
Total		120	100

**Table 2. Awareness and Experience with Micro-transactions**

Source: Survey Data

A substantial majority of respondents (85.0%) reported awareness of micro-transactions, indicating widespread familiarity with in-game purchasing systems. This high level of awareness suggested that micro-transactions have become well-recognised features in modern gaming.

Most respondents (70.0%) had made in-game purchases, demonstrating that micro-transactions are widely adopted among players. This adoption rate confirmed the commercial success of micro-transaction-based monetisation models. With respect to spending frequency, the largest proportion of respondents spent on micro-transactions sometimes (38.3%), while 26.7% spent rarely, and 20.0% never spent. Only 15.0% spent very often, suggesting that heavy spending was concentrated among a smaller group of players. This pattern was consistent with the "whale" phenomenon documented in previous research (Amano & Simonov, 2023), wherein a small proportion of players account for a disproportionate share of revenue.

Regarding the types of micro-transactions purchased, cosmetic items were the most popular (53.3%), followed by battle passes (40.0%). Loot boxes were the least purchased type (6.7%). This preference pattern indicated that players favoured optional, non-competitive enhancements over randomised reward systems.

### 4.3 Motivations for Purchases

Motivation	Frequency	Percentage of Respondents
Visual/Customisation Appeal	66	55.00%
Limited-Time Offers	58	48.30%
Curiosity	55	45.80%
Social Influence	48	40.00%
Better Game Performance	44	36.70%
Do Not Make Purchases	24	20.00%

**Table 3. Motivations for In-Game Purchases (Multiple Responses)**

Source: Survey Data

Visual and customisation appeal emerged as the most frequently cited motivation for making in-game purchases, reported by 55.0% of respondents. This finding suggested that aesthetic enhancement of gameplay experience was a primary driver of consumer spending. Limited-time offers (48.3%) and curiosity (45.8%) were also prominent motivations, indicating that marketing strategies employing scarcity and novelty effectively influenced purchasing decisions.

Social influence was reported by 40.0% of respondents, suggesting that peer behaviour and social dynamics within gaming communities played a role in driving spending. Better game performance (36.7%) was a less common motivation, which aligned with the preference for cosmetic items over gameplay-enhancing purchases observed in Table 2. The finding that 20.0% of respondents did not make purchases provided context for understanding non-spenders within the gaming population.

### 4.4 Psychological Influences on Spending

Variable	Response	Frequency	Percent
Influence on Spending Behaviour	Strongly Agree	26	21.7
	Agree	48	40
	Neutral	22	18.3
	Disagree	14	11.7
	Strongly Disagree	10	8.3
Impulse Buying Behaviour	Yes	72	60
	No	48	40
Pressure from Limited-Time Offers	Yes	54	45
	Sometimes	42	35
	No	24	20
Total		120	100

**Table 4. Psychological Influences on Spending Behaviour**

Source: Survey Data

A combined majority of respondents (61.7%) agreed or strongly agreed that micro-transactions influenced their spending behaviour, indicating that players were conscious of the impact of these systems on their purchasing decisions. Neutral responses accounted for 18.3%, while 20.0% disagreed or strongly disagreed. Impulse buying behaviour was reported by 60.0% of respondents, suggesting that spontaneous purchases were common in the context of in-game transactions. This high prevalence of impulsive spending indicated the effectiveness of psychological triggers embedded within micro-transaction systems. Regarding pressure from limited-time offers, 45.0% of respondents reported feeling pressure to purchase, while 35.0% experienced this pressure sometimes. Only 20.0% reported no pressure. This finding demonstrated the role of Fear of Missing Out (FOMO) in driving purchase decisions and highlighted the effectiveness of time-limited marketing strategies in the gaming context.

#### 4.5 Satisfaction and Perceptions

Variable	Response	Frequency	Percent
Satisfaction After Purchase	Always	18	15
	Sometimes	56	46.7
	Rarely	30	25
	Never	16	13.3
Perception of Fairness	Yes	28	23.3
	No	62	51.7
	Not Sure	30	25
Loot Boxes as Gambling	Yes	68	56.7
	No	20	16.7
	Not Sure	32	26.7
Need for Regulation	Yes	74	61.7
	No	18	15
	Not Sure	28	23.3
Impact on Gaming Experience	Yes	46	38.3
	No	42	35
	Not Sure	32	26.7
Targeting Vulnerable Players	Yes	70	58.3
	No	22	18.3
	Not Sure	28	23.3
Willingness to Continue Playing	Yes	40	33.3
	No	38	31.7
	Maybe	42	35
Total		120	100

**Table 5. Satisfaction and Perceptions of Micro-transactions**

Source: Survey Data

Post-purchase satisfaction varied considerably among respondents. While 46.7% reported feeling satisfied sometimes, 25.0% felt satisfied rarely, and 13.3% never felt satisfied. Only 15.0% always felt satisfied after making in-game purchases. This distribution suggested that micro-transactions did not consistently deliver long-term value to players.

Perception of fairness revealed that a majority of respondents (51.7%) believed micro-transactions were not fair, while only 23.3% perceived them as fair. A quarter of respondents (25.0%) were uncertain. This finding indicated significant ethical concerns among players and highlighted a disconnect between the commercial success of micro-transactions and consumer perceptions of fairness. Regarding loot boxes, a majority (56.7%) viewed them as similar to gambling, while

26.7% were uncertain, and only 16.7% disagreed. This perception aligned with academic research that has found associations between loot box spending and problem gambling behaviours (Garea et al., 2023; Xiao, 2023a) and supported ongoing regulatory scrutiny. Support for stricter regulation was expressed by 61.7% of respondents, while 23.3% were uncertain, and 15.0% opposed regulation. This strong support for regulatory intervention reflected concerns about consumer protection and the perceived inadequacy of existing self-regulatory measures. Opinions on whether micro-transactions improved the gaming experience were divided: 38.3% agreed, 35.0% disagreed, and 26.7% were uncertain. This division suggested that the impact of micro-transactions on player experience depended on implementation and individual preferences.

A majority (58.3%) believed that micro-transactions targeted vulnerable players, including younger audiences. This concern was consistent with research highlighting risks for minors and psychologically vulnerable individuals (Bank, 2023; Sanchez-Adame et al., 2023). Responses regarding willingness to continue playing micro-transaction-heavy games were fairly balanced: 33.3% were willing, 31.7% were unwilling, and 35.0% were uncertain. This distribution indicated uncertainty about the long-term sustainability of micro-transaction-heavy games and suggested that player retention could be vulnerable to negative perceptions of monetisation practices.

#### 4.6 Perceptions of Micro-Transaction Impact and Regulatory Preferences

Statement	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
Micro-transactions make games more engaging	28 (23.3%)	44 (36.7%)	26 (21.7%)	14 (11.7%)	8 (6.6%)
Micro-transactions encourage overspending	36 (30.0%)	42 (35.0%)	20 (16.7%)	14 (11.7%)	8 (6.6%)
Loot boxes should be banned	32 (26.7%)	38 (31.7%)	24 (20.0%)	16 (13.3%)	10 (8.3%)
Micro-transactions improve game longevity	22 (18.3%)	40 (33.3%)	30 (25.0%)	18 (15.0%)	10 (8.3%)
Micro-transactions exploit players psychologically	34 (28.3%)	46 (38.3%)	20 (16.7%)	12 (10.0%)	8 (6.7%)

**Table 6. Perceptions of Micro-Transaction Impact and Regulatory Preferences**

Source: Survey Data

Regarding engagement, a combined majority of 60.0% agreed or strongly agreed that micro-transactions made games more engaging, suggesting that features such as rewards, progression systems, and customisation options enhanced player involvement. This finding supported the industry argument that micro-transactions could improve player experience by funding ongoing content development. Concerning overspending, 65.0% of respondents agreed or strongly agreed that micro-transactions encouraged overspending, indicating widespread awareness of financial risks associated with in-game purchases. This finding raised concerns about the design of micro-transaction systems, which may encourage repeated spending through psychological triggers.

Support for banning loot boxes was expressed by 58.4% of respondents, while 20.0% remained neutral, and 21.6% opposed a ban. This divided opinion suggested that while players recognised issues with loot boxes, there was no strong consensus on elimination, and some may have preferred regulation rather than complete prohibition. Regarding game longevity, 51.6% agreed or strongly agreed that micro-transactions improved game longevity, indicating a positive perception of their role in sustaining games through continuous updates and content. However, 25.0% remained neutral, and 23.3% disagreed, suggesting that this benefit may not be universally experienced. Most notably, 66.6% agreed or

strongly agreed that micro-transactions exploited players psychologically, reflecting strong concerns about the use of behavioural techniques such as impulse triggers, reward systems, and social pressure in encouraging spending. This finding supported ethical critiques of micro-transaction systems (Sanchez-Adame et al., 2023) and highlighted the need for greater scrutiny of monetisation practices.

**4.7 Multivariate Analysis: Relationship between Impulse Buying, Fairness Perception, and Support for Regulation**

Category	Total Respondents	Think Micro-transactions are Fair	Support Regulation
Impulse Buyers	72	22 (30.6%)	54 (75.0%)
Non-Impulse Buyers	48	22 (45.8%)	19 (39.6%)
Total	120	44 (36.7%)	73 (60.8%)

**Table 7. Relationship between Impulse Buying, Fairness Perception, and Support for Regulation**

Source: Survey Data

The multivariate analysis revealed a notable relationship between impulse buying behaviour, perception of fairness, and support for regulation. Among respondents who engaged in impulse buying, only 30.6% believed that micro-transactions were fair, while 75.0% supported stricter regulation. In contrast, among non-impulse buyers, 45.8% perceived micro-transactions as fair, and support for regulation was lower at 39.6%.

This finding indicated a behavioural contradiction: impulse buyers actively participated in micro-transactions yet perceived them as unfair and supported regulatory intervention at higher rates than non-impulse buyers. This suggested that psychological mechanisms, such as immediate gratification or game design influences, may have overridden rational decision-making. The results highlighted the need for gaming companies to adopt more ethical and transparent monetisation strategies, as current practices appeared to exploit consumers who were aware of potential harm but unable to resist psychological triggers.

**4.8 Discussion**

The findings indicate that micro-transactions have become deeply integrated into contemporary gaming culture, particularly among young and highly active players. A substantial majority of respondents were aware of micro-transactions and had previously made in-game purchases, demonstrating the widespread acceptance of these monetisation systems. Cosmetic items and battle passes emerged as the most popular purchases, suggesting that players generally prefer purchases that enhance personalisation and gameplay experience rather than purely chance-based rewards. Visual appeal, limited-time offers, and curiosity were identified as the leading motivations for spending, highlighting the effectiveness of marketing techniques based on scarcity and novelty. These results are consistent with previous research, which found that micro-transactions are often designed to increase player engagement and spending through customised rewards, progression systems, and behavioural incentives (Sánchez-Adame et al., 2023). Furthermore, the spending pattern observed in this study supports the findings of Amano and Simonov (2024), who demonstrated that a relatively small group of high-spending players, commonly referred to as “whales,” contributes a disproportionate amount of gaming revenue through micro-transactions and loot boxes.

Despite the popularity of micro-transactions, the findings reveal significant psychological and ethical concerns among players. A majority of respondents reported engaging in impulse purchases and experiencing pressure from limited-time

offers, indicating the influence of Fear of Missing Out (FOMO) and other persuasive design mechanisms. More than half of the respondents perceived loot boxes as a form of gambling, while a strong majority agreed that micro-transactions encourage overspending and exploit players psychologically. Additionally, support for stricter regulation was high, particularly among impulse buyers, who were more likely to view micro-transactions as unfair despite actively participating in them. These findings align with existing literature linking loot-box spending to problem gambling behaviours, impulsivity, and psychological vulnerability (Garea et al., 2023; Xiao et al., 2024). Research has also highlighted that micro-transaction systems may disproportionately affect vulnerable users through addictive design features and manipulative engagement strategies, reinforcing the need for stronger consumer protection measures and greater transparency in game monetisation practices (Sánchez-Adame et al., 2023; Close et al., 2023).

## 5. CONCLUSION

This study found that micro-transactions are widely recognized and frequently used by gamers, particularly among young adults who engage regularly in video gaming. Cosmetic items and battle passes were the most preferred purchases, indicating that players value personalization and enhanced gaming experiences. The findings also revealed that visual appeal, limited-time offers, and curiosity are major factors influencing spending decisions. However, a significant proportion of respondents reported impulse buying behaviour and perceived psychological pressure from time-limited offers. Many participants viewed loot boxes as comparable to gambling and expressed concerns regarding fairness, player exploitation, and the targeting of vulnerable groups. Consequently, most respondents supported stronger regulation of micro-transactions and greater consumer protection measures. Future studies should employ larger and more diverse samples, examine the long-term psychological and financial effects of micro-transactions, and explore differences across game genres, age groups, and geographical regions.

## REFERENCES

- [1] Amano, T., & Simonov, A. (2024). What makes players pay? An empirical investigation of in-game lotteries. Federal Trade Commission Working Paper. [https://www.ftc.gov/system/files/ftc\\_gov/pdf/simonovamano.pdf](https://www.ftc.gov/system/files/ftc_gov/pdf/simonovamano.pdf)
- [2] Close, J., Spicer, S. G., Nicklin, L. L., Uther, M., Whalley, B., Fullwood, C., Parke, J., Lloyd, J., & Lloyd, H. (2023). Exploring the relationships between psychological variables and loot box engagement, part 1: Pre-registered hypotheses. *Royal Society Open Science*, 10(12), 231045. <https://doi.org/10.1098/rsos.231045>
- [3] Garea, S. S., Sauer, J. D., Hall, L. C., Williams, M. N., & Drummond, A. (2023). The potential relationship between loot box spending, problem gambling, and obsessive-compulsive gamers. *Journal of Behavioral Addictions*, 12(3), 733–743. <https://doi.org/10.1556/2006.2023.00038>
- [4] Kovsca, M., Lackovic Vincek, I., & Tkalcec, M. (2023). Monetisation models and micro-transactions in the contemporary video game industry. *Economics of Digital Media Studies*.
- [5] Mattinen, T., Macey, J., & Hamari, J. (2023). Digital gaming and gambling convergence: A scoping review. *Journal of Gambling Studies*.
- [6] Petrovskaya, E., & Zendle, D. (2023). Predatory monetisation? Player perspectives on battle passes and in-game purchases in video games. *Games and Culture*.
- [7] Rita, P., Guerreiro, J., Ramos, R., & Caetano, A. (2024). Drivers of impulse buying behaviour in video game micro-transactions. *Journal of Retailing and Consumer Services*.
- [8] Sánchez-Adame, L. M., Monroy-Rodríguez, G., Mendoza, S., Decouchant, D., & Mateos-Papis, A. P. (2023). Framework for ethically designed microtransactions in the metaverse. *IEEE Access*, 11, 140687–140700. <https://doi.org/10.1109/ACCESS.2023.3341057>
- [9] Sánchez-Adame, L. M., Monroy-Rodríguez, G., Mendoza, S., Decouchant, D., & Mateos-Papis, A. P. (2023). Framework for ethically designed microtransactions in the metaverse. *IEEE Access*, 11, 140687–140700. <https://doi.org/10.1109/ACCESS.2023.3341057>

[10] Xiao, L. Y., Fraser, T. C., Nielsen, R. K. L., & Newall, P. W. S. (2024). Loot boxes, gambling-related risk factors, and mental health in Mainland China: A large-scale survey. *Addictive Behaviors*, 148, 107860.  
<https://doi.org/10.1016/j.addbeh.2023.107860>