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The Influence of Impulsive Behavior on Financial Management of Online Gamers: A Financial Accounting Perspective

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ABSTRACT

This study aims to analyze the influence of self-control, fear of missing out (FOMO), and financial literacy on gamers' impulsive characteristics. This study uses a quantitative approach with survey techniques through the distribution of questionnaires to active gamers, with a total of 77 respondents. Data analysis was carried out using Structural Equation Modeling (SEM) to test the relationships between variables. The results of the study showed that self-control, FOMO, and financial literacy each had a significant influence on the impulsive characteristics of gamers. Although statistically self-control indicates a positive relationship direction, conceptually the increase in self-control is related to a decrease in impulsive behavior. Meanwhile, FOMO has been shown to significantly increase impulsive behavior tendencies. Interestingly, financial literacy also shows a positive influence on impulsive behavior, which is a finding that is not in accordance with theoretical expectations (unexpected finding). This indicates that financial literacy in certain contexts can increase individual confidence in financial decision-making, thus encouraging impulsive behavior. These findings suggest that gamers' impulsive behavior is influenced by the interaction between psychological and financial factors in the digital environment. This research contributes to the development of the literature on financial behavior in the digital economy, especially in the context of online games, and provides practical implications regarding the importance of strengthening self-control and emotion regulation in financial decision-making.

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1. INTRODUCTION

The online gaming industry in Indonesia has experienced rapid growth in recent years. Based on data from the Ministry of Communication and Information as reported by JawaPos (Banu Adikara,

2024), the number of active online game players reached around 121.7 million in 2021. That figure jumped to 174.1 million in 2023 and is projected to surpass 191 million by 2025, with the majority of players accessing games via smartphones. This rapid growth has a double impact on society. On the positive side, playing online games has been shown to improve cognitive abilities such as focus, quick decision-making, problem-solving, teamwork, communication, and social empathy. However, on the negative side, excessive gaming can lead to addiction, social disorders, decreased self-control, and poor financial management due to impulsive behavior. Physically, prolonged gaming sessions can lead to posture problems, eye fatigue, and a lack of physical activity. Psychologically, online gaming addiction is often associated with an increased risk of depression, anxiety, and sleep disorders. This suggests that impulsive behavior among gamers generally arises through the purchase of virtual items or spontaneous in-game top-up transactions without careful planning. This phenomenon reflects a pattern of consumptive behavior driven by emotional impulses. A study conducted by Ilham and Muhid (2022) revealed that a low level of self-control has a significant impact on the tendency to act impulsively among online game players. However, research that specifically examines the impact of impulsive behavior on financial management, especially from a financial accounting perspective, is still very limited.

According to Raji et al. (2025), impulsivity or impulsive behavior refers to the impulse to act suddenly without considering the risks or consequences that may arise. Impulsive people usually make decisions suddenly without careful consideration and often ignore the implications in the future. For example, a person may make a spontaneous purchase without logically considering the usefulness or price of the item, only driven by a momentary emotional impulse. In the field of finance, financial management includes the stages of planning, controlling, and evaluating the use of funds to achieve desired financial goals. Suprianto et al. (2023) explained that the tendency to behave impulsively has the potential to disrupt personal financial stability, especially among groups with limited financial knowledge. Most previous research has focused more on psychological aspects and triggers of impulsive behavior, so there is still a gap in exploring its impact on financial management from a financial accounting perspective. Given this situation, this study is designed to examine the relationship between impulsive behavior and financial management among online game players, especially related to financial planning and control aspects. A quantitative approach was applied by distributing questionnaires to respondents who regularly played online games and made in-game transactions. The results of this study are expected to enrich financial accounting theories and digital consumption patterns, as well as provide practical advice for players to manage their expenses more wisely and effectively.

Literature Review

Grand Theory of Research

This study is grounded in the behavioral finance and behavioral accounting approaches, two interdisciplinary perspectives that integrate psychological insights into financial and accounting decision-making. These approaches emerged as critiques of classical financial theory, which assumes that individuals consistently behave rationally when managing financial resources. Historically, the behavioral perspective is rooted in the concept of bounded rationality introduced by Herbert A. Simon (1955), who argued that individuals' rationality is constrained by limited information, cognitive capacity, and situational pressures. This idea was further developed within behavioral economics and finance through Kahneman and Tversky's (1979) Prospect Theory, which explains that individuals' decisions under conditions of risk and uncertainty are often influenced by cognitive biases, emotions, and subjective risk perceptions rather than objective calculations.

Within the framework of behavioral finance, individual financial decisions such as risk tolerance and consumption behavior are shaped by psychological factors including emotions, social influence, and hedonic motivation. This perspective is highly relevant in digital environments such as online gaming, where monetization systems, limited-time promotions, and social comparison mechanisms create conditions that encourage rapid and impulsive decision-making. Meanwhile, behavioral accounting emphasizes that accounting processes and financial management are not purely technical activities but are significantly influenced by human behavior. Early studies by Argyris (1952) and later by Birnberg and Shields (1989) highlight that budgeting, financial planning, and control systems are deeply affected by individual attitudes, motivation, and self-control. In the context of personal finance, this approach views financial planning and financial control as outcomes of the interaction between cognitive capabilities (financial literacy) and affective factors (impulsivity and FOMO).

Impulsive behavior reflects an individual's habit of making a purchase suddenly without undergoing a thorough logical evaluation. These decisions are generally driven by momentary emotions and external stimuli such as limited-time promotions, special events, or the convenience of digital payment systems. Ramadhan and Yusnaini (2025) explain that the ease of cashless transactions has increased the tendency to impulse purchases by reducing the "pain when paying" experienced during payments. In addition, cognitive biases and unplanned accounting mental habits further reinforce these consumptive behaviors. Research published in Frontiers in Psychology (2022) Research published in, especially among Generation Z, who are heavily involved in digital media (Lina et al., 2022). In the Indonesian context, young people often show impulsive tendencies triggered by the phenomenon Fear of Missing Out (FOMO) when using digital platforms. Although financial literacy functions as a suppressant of impulsive behavior, social media and exposure to digital promotions can actually strengthen these consumptive impulses (Oktaviana & Irawan, 2025).

In the gaming world, impulsive behavior often occurs when players make in-game purchases or top-ups without careful consideration. Factors such as peer influence, limited-time promotions, and social pressure within the gaming community are the main triggers of this behavior (Wang et al., 2023). The findings of Ghaniyah and Rufaidah (2024) also emphasize that FOMO (Fear of Missing Out) and the perception of scarcity of digital products significantly increases the likelihood of impulse purchases, especially with the existence of a "pay later" system that weakens an individual's financial self-control. Meanwhile, Shao et al. (2024) revealed a close relationship between exposure to celebrity figures and the influence of social media and spontaneous purchasing patterns in various countries. Beyond social factors, in-game mechanics such as loot boxes and gacha systems further reinforce impulsive behavior. Savolainen et al. (2024), in their systematic review, stated that expenditure for Loot Box associated with an increased risk of impulsive disorders, anxiety, and psychological distress. Similar findings were reported by Mahendra et al. (2025) in Indonesia, showing that factors such as shopping pleasure, emotional drive, and ease of transaction contribute to the increase in impulse purchases among urban game players.

Conceptually, the easier digital transactions and the reduction of "pain when paying" actually trigger consumers to shop without planning. In the long run, such behavior leads to financial imbalances, as funds that should be allocated for savings or long-term needs are absorbed by spontaneous consumption. Broekhoff and Cruijsen (2024) explained that financial literacy and self-control skills play a role as moderation factors that are able to suppress these impulsive tendencies. Research by Ilham and Muhid (2021) revealed that self-control has a significant relationship with impulsive behavior among online game players. These findings are supported by Suprianto et al. (2023) and Putriasih & Yasa (2022), who found that psychological variables such as self-control, consumptive behavior, and financial literacy are strongly related to financial management skills. The

stronger a person's level of impulsivity, the lower their ability to plan and control finances. On the other hand, Meliani et al. (2024) found that high financial literacy is positively correlated with an individual's ability to manage finances wisely, including distinguishing between financial needs and wants.

In the context of financial accounting, financial management consists of two main dimensions: financial planning (which includes budgeting, recording, and allocation of funds) and financial control (which involves budget discipline, evaluation, and corrective actions). This framework is aligned with the perspectives of Gitman and Zutter (2015), who emphasize the importance of the planning and monitoring function as a core element of financial management. However, empirical studies that directly examine the influence of impulsive behavior on these two dimensions in the context of online gaming players are still limited. The development of monetization models in the digital game industry, especially microtransactions, loot boxes, limited-time offers, and paid events, has created a transactional environment that is very conducive to impulse purchases. These features combine hedonistic stimulation, scarcity, and social visibility, driving quick purchase decisions without long-term planning. Beyond its microeconomic consequences (such as player recurring spending), certain monetization mechanisms have also been linked to well-being problems (e.g., symptoms of addiction and gambling-like behaviors). Therefore, research on the determinants of in-game purchasing behavior is essential for both academic literature and public policy development (Kim et al.2023).

From the perspective of consumer behavior, impulsive behavior refers to the urge to make a quick and unplanned purchase, which is driven by momentary emotions or external influences. In the context of gamers, this often happens when buying exclusive items, top-ups, or limited-time loot boxes. Rita et al. (2024) explain that hedonistic motives, social pressure, and the convenience of the payment system reinforce the tendency to impulse purchases in microtransactions. This phenomenon is consistent in the global market and Indonesia, where the urgency to buy increases with limited-time promotions and peer influence in the gaming community. Impulsive behavior causes individuals to focus more on short-term satisfaction than long-term financial goals. In financial planning, this impulsivity reduces a person's tendency to budget, set priorities, and conduct disciplined financial evaluations. Further, impulsivity inhibits financial control as individuals tend to have difficulty refraining from unplanned purchases.

Phenomenon Loot Box is a concrete example of how impulsivity affects digital financial behavior. Zendle and Cairns (2018) found that spending on Loot Box positively correlated with the symptoms of problem gambling. Li et al. (2023) reinforce these findings, providing evidence that purchases Loot Box Recurrent is associated with financial stress and decreased psychological well-being, especially among younger users. A 2025 study from Flinders University also found a link between purchases Loot Box and increased risk of addiction and mental health problems. Several cases reported by The Guardian (May 2024) and The Sun (Macaskill, 2024) highlight how impulse in-game purchases can lead to addiction and serious financial losses. These reports show that without self-control and good financial management, impulsive behavior can escalate into long-term economic and psychological problems.

Financial control involves the ability of individuals to manage, monitor, and adjust expenses according to financial goals. Factors such as mental budgeting, financial literacy, and self-control play an important role in maintaining personal financial stability. A PLOS ONE study (2023) noted that individuals with strong financial knowledge and the habit of categorizing expenses showed better financial management and were less susceptible to impulses to consumptive behavior. Additionally, the use of digital finance apps that feature budget management and transaction tracking can further enhance an individual's ability to resist impulsive buying impulses.

Self-Control

Self-control refers to a person's ability to control thoughts, emotions, and actions in the face of impulses or temptations in order to achieve long-term goals. In the context of online gaming, self-control plays an important role in controlling the urge to make impulse purchases such as paid items

or additional in-game features. Individuals with a good level of self-control tend to be able to consider the consequences before making a decision, so they are wiser in managing expenses (Duckworth et al., 2019). Recent research (Galla and Duckworth, 2015; Duckworth et al., 2019) indicate that self-control is not only related to the question of resisting momentary impulses, but also involves the formation of habits and behavior management strategies. explaining that those with strong self-control tend to create an environment that supports long-term goals, thereby reducing the risk of exposure to temptation. In an online gaming environment, this can be a limitation on playing time or setting a budget for in-game purchases.

In addition, a study by Inzlicht et al. (2014) that is still relevant in the modern literature explains that failures in self-control are more influenced by changes in motivation and attention than mere mental fatigue. This approach is supported by recent research that shows that situational factors, such as social pressure in games and reward system design, can weaken players' self-control and increase impulsive behavior tendencies (King and Delfabbro, 2018). In the context of digital behavior, research also shows that self-control has a negative relationship with addictive and impulsive behavior. Research conducted by Li et al. (2021) suggests that individuals with weak self-control are more prone to excessive consumptive patterns in the digital environment, including impulsive in-game purchases. In contrast, players with good self-control are generally more effective at limiting spending and making logical choices. Thus, self-control is an important key in explaining the impulsive behavior of online gamers. The higher a person's level of self-control, the less likely it is that individual to make spontaneous purchases in the game.

H1: Self-control has a significant effect on the impulsive nature of gamers, where increased self-control tends to decrease impulsive behavior.

Fear of Missing Out

FOMO or Fear of Missing Out is a psychological condition characterized by anxiety that stems from the fear of not participating in experiences that others find interesting. In gaming, FOMO is often manifested through the desire to buy rare items or join in-game events to avoid falling behind other players (Nguyen, 2025). Przybylski et al. (2013) argue that FOMO has a strong relationship with digital addiction and impulsive decision-making. Gamers who experience FOMO are more likely to make unplanned spontaneous purchases driven by emotional impulses to stay relevant and competitive. This is in line with Rozgonjuk et al. (2020), who found that higher levels of FOMO contribute to decreased self-control, especially in fast-paced digital environments such as online games. Recent studies have also highlighted that FOMO is not only triggered by social aspects but also by game design mechanisms such as limited-time rewards and promotional events that increase psychological pressure to act immediately (King & Delfabbro, 2020). As such, FOMO serves as a key driver of gamers' impulsive behavior, especially in the context of emotion-driven digital purchases.

H2: Fear of missing out (FOMO) has a positive influence on the impulsive attitude of gamers.

Financial Literacy

Financial literacy is defined as a person's ability to understand and manage financial resources optimally. Lusardi and Mitchell (2014; 2020) highlight that financial literacy plays a crucial role in preventing bad economic decisions, including impulse purchases. Gamers with strong financial literacy are able to assess the benefits and risks of each digital purchase and consider the long-term consequences of their consumption habits. Zhao (2021), through his meta-analysis, uncovered the inverse relationship between financial knowledge and impulsive impulses in the realm of digital platforms. This indicates that the higher a person's financial understanding, the lower their tendency to act impulsively. In the context of online gaming, financially literate gamers are more aware of in-game spending and are better able to separate short-term needs and wants. This finding is in line with

Nguyen (2025), who mentioned that financial literacy can serve as the main mediating variable between FOMO and impulsivity. Therefore, improving financial literacy can be a preventive strategy to reduce gamers' impulsive behaviors driven by emotions and social pressures.

H3: Financial literacy has a negative influence on the impulsive attitude of gamers.

Gamers' Impulsive Attitude

A gamer's impulsive behavior is a spontaneous response to a gaming stimulus that triggers positive emotions or social pressure. Based on the dual system theory in psychological behavior, impulsivity is influenced by the interaction between the rational cognitive system and the emotional affective system (Zhao et al., 2021). When affective systems dominate, gamers are more prone to make unplanned purchases. King and Delfabbro (2020) note that modern games are designed to exploit player impulsivity through instant rewards and immediate gratification mechanisms. This condition is further strengthened by FOMO (Fear of Missing Out), low levels of self-control, and the dynamics of individual financial literacy, which together can create a cycle of consumptive behavior among gamers. Therefore, the impulsive behavior of gamers is not only the result of momentary emotional impulses, but is a complex consequence of the interaction of psychological, social, and economic factors. This underscores the importance of a holistic approach in understanding the dynamics of digital consumer behavior in the era of gamification economy.

Impulsive behavior in the context of digital purchasing is not only limited to spontaneous actions, but also includes emotional responses as well as consequences that arise after a purchase decision is made. Based on the perspective of consumer behavior, impulsivity is seen as a multidimensional phenomenon that involves cognitive, affective, and behavioral aspects. Thus, in this study, impulsive constructs were comprehensively measured through indicators that represent spontaneous buying actions, post-purchase emotional reactions, and financial impacts that may arise from these behaviors.

2. METHOD

Research Design

This study used a quantitative approach with Structural Equation Modeling (SEM) to analyze the relationship between risk tolerance, FOMO, finansial literacy, and gamer impulsive characteristics. SEM was applied to test the direct and indirect effects between latent variables. Data analysis was conducted using AMOS 22 and SPSS 22, and the research model is presented in Figure 1.

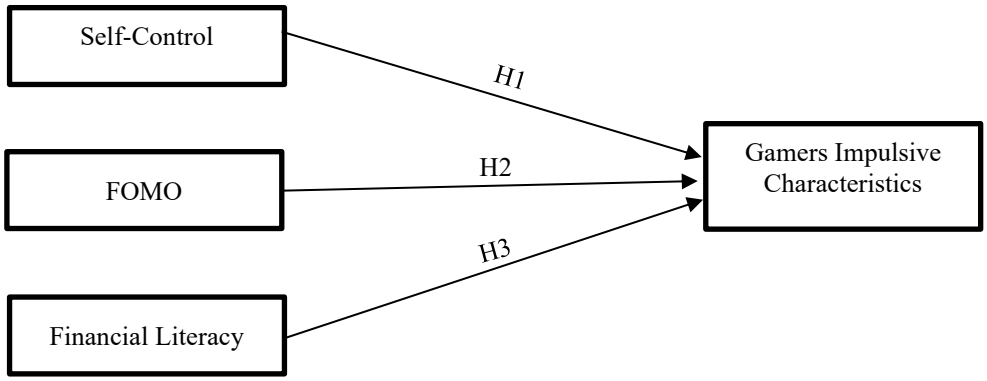

Figure I: Research Model

Participants/Sample Selection and Data Sources

The participants in this study were active online gamers who had experience playing online games and engaging in in-game purchases or top-up transactions. The target population consisted of

individuals who regularly play online games on digital platforms, particularly mobile-based games, where microtransactions and limited-time promotions are common.

A quantitative approach was employed using purposive sampling, where respondents were selected based on specific criteria aligned with the research objectives. The criteria required participants to actively play online games at least three times per week and to have made in-game purchases within a certain period. This approach ensured that respondents possessed relevant experience related to the research context. A total of 77 respondents were successfully collected through the distribution of questionnaires across digital platforms and gaming communities.

Instrumentation/Data Collection

Data were collected using a questionnaire developed based on the research variables. All items were measured using a 5-point Likert scale, ranging from strongly disagree (1) to strongly agree (5), to more accurately capture respondents' perceptions

Data Analysis/Estimating Model/Variable Measurement

Data were analyzed using quantitative techniques. Descriptive statistics and preliminary analyses were conducted using SPSS 22, while hypothesis testing and structural model estimation were performed using Structural Equation Modeling (SEM) with AMOS 22.

Each construct—Self-Control, Fear of Missing Out (FOMO), Financial Literacy, and Gamer Impulsive Characteristics—was measured using multiple indicators to examine the relationships among variables and to test the proposed hypotheses. The results of this study are expected to contribute to the development of behavioral accounting and financial behavior literature in the digital context, as well as provide practical insights for gamers in managing their financial decisions more rationally.

3. RESULTS AND DISCUSSION

Results

Table I. Demographic and Professional Profile of Respondents

Demographic Item	Frequency	Percentile %
Age (Years)		
≤ 15	5	6,5 %
16 – 21	46	59,7 %
22 – 30	25	32,5 %
≥ 31	1	1,3 %
Gender		
Male	13	16,9 %
Female	64	83,1 %
Status		
Student	57	74,0 %
Working	19	24,7 %
Unemployed	1	1,3 %
Average Monthly Income		
≤ 500.000	32	41,6 %
500.000 – 1.000.000	20	26,0 %
1.000.000 – 2.000.000	12	15,6 %
≥ 2.000.000	13	16,9 %
Average Monthly In-Game Spending		
≤ 100.000	45	58,4 %

100.00 – 200.000	19	24,7 %
200.000 – 500.000	7	9,1 %
≥ 500.000	6	7,8 %
Ever Made In-Game Purchases		
Yes	68	88,3 %
No	9	11,7 %

Table I presents the demographic and professional characteristics of the respondents. The findings showed that the majority of respondents were aged 16–21 years old (59.7%), followed by those aged 22–30 (32.5%). Only a small percentage of respondents were ≤15 years old (6.5%) and ≥31 years old (1.3%). This distribution shows that most of the participants were teenagers and young adults who were actively involved in online gaming activities. In terms of gender, female respondents dominated the sample (83.1%), while male respondents amounted to 16.9%. This shows a fairly high level of female participation in gaming, which reflects the increasing inclusivity and popularity of gaming among women. Regarding employment status, most of the respondents were Students (74.0%), followed by those who were employed (24.7%) and not employed (1.3%). The dominance of student respondents was consistent with the age profile, suggesting that gaming is very common among individuals who are still in the education stage.

The average monthly income analysis showed that most respondents earned ≤ IDR 500,000 (41.6%), followed by those earning between IDR 500,000–1,000,000 (26.0%), IDR 1,000,000–2,000,000 (15.6%), and ≥ IDR 2,000,000 (16.9%). This pattern aligns with the demographic profiles of learners and young adults, who generally have limited personal incomes. In terms of average monthly spending on gaming, most respondents reported spending ≤ IDR 100,000 (58.4%), while 24.7% spent IDR 100,000–200,000, 9.1% spent IDR 200,000–500,000, and 7.8% spent ≥ IDR 500,000. These findings show that although the majority of gamers spend a moderate amount of money, some of them allocate a large amount of money for gaming purposes. Finally, when asked about in-game purchase behavior, 88.3% of respondents confirmed that they had made an in-game purchase, while only 11.7% stated that they had never done so. This high proportion of in-game buyers supports the idea that spending behavior is a common aspect among gamers and may be related to their impulsive tendencies, which will be further explored in a later analysis.

Table II. Correlation Matrix for Measurement Scales

Konstruk	Mean	SD	RT	FO	FL	GIC
RT	5,584	0.833	0,833			
FO	5,311	0.751	0.599**	0,751		
FL	5,555	0.823	0.856**	0.607**	0,823	
GIC	5,688	0.787	0.599**	0.568**	0.543**	0,774

Note: RT = Risk Tolerance; FO = Fear of Missing Out; FL = Financial Literacy; GIC = Gamers Impulsive Characteristics. SD = Standard Deviation.

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Table III. Measurement Results

Variables Item Scales		Factor Loadings	α	CR	AVE
Self-Control			0.865	0.872	0.695
SC1:	I re-evaluate before purchasing an in-game item	0.824			
SC2:	I can delay purchases even when tempted by promotions	0.852			
SC3:	I prefer saving money rather than making impulsive purchases	0.824			
FOMO (Fear of Missing Out)			0.783	0.794	0.564
FO1:	I feel a strong urge to top-up immediately when seeing in game promotions	0.673			
FO2:	I fear of missing out if i don't join in-game purchase event	0.761			
FO3:	I feel anxious when my friends own game items or skins i don't have yet	0.813			
Financial Literacy			0.910	0.913	0.678
FL1:	I understand the basic principles of financial management	0.791			
FL2:	I understand the basic meaning of debt and investment	0.874			
FL3:	I create a specific budget for in game spending	0.792			
FL4:	I record every expense related to games	0.822			
FL5:	I allocate game related funds according to my finansial capacity	0.834			

Gamers Impulsive Characteristics		0.815	0.906	0.765
GIC2:	I top-up in games spontaneously and without planning	0.876		
GIC3:	I regret making spontaneous in-game purchases	0.969		
GIC4:	I have ever gone into debt buy in-game items	0.767		

Table III presents the results of the measurement model assessment. The analysis was conducted using Confirmatory Factor Analysis (CFA) to evaluate the validity and reliability of each construct. The findings indicate that all constructs in this study meet the recommended thresholds for factor loadings, reliability, and convergent validity, suggesting that the measurement model is statistically sound and appropriate for further structural analysis.

1. Self-Control

Construct Self-Control (SC) was measured using three indicators (SC1–SC3) with *factor loadings* ranging from 0.824 to 0.852, all of which exceeded the recommended minimum value of 0.70. The construct shows strong internal consistency, with *Cronbach's Alpha* (α = 0.865) and *Composite Reliability* (CR = 0.872) both above 0.70, which confirms excellent reliability. Further, the *Average Variance Extracted* (AVE = 0.695) exceeded the threshold of 0.50, which indicates a satisfactory convergent validity.

2. FOMO (Fear of Missing Out)

The Fear of Missing Out (FOMO) construct consists of three indicators (FO1–FO3) with factor loadings ranging from 0.673 to 0.813. These values indicate adequate representation of the construct. The reliability measures are acceptable, with α = 0.783 and CR = 0.794, while the AVE value (0.564) meets the minimum requirement of 0.50. Thus, the FOMO construct demonstrates both validity and reliability.

3. Financial Literacy

The Financial Literacy (FL) construct was measured using five indicators (FL1–FL5) with factor loadings between 0.791 and 0.874, all of which exceed the recommended value of 0.70. The construct demonstrates excellent internal consistency with α = 0.910 and CR = 0.913, confirming its high reliability. The AVE value (0.678) also indicates good convergent validity, suggesting that the indicators effectively represent the Financial Literacy construct.

4. **Gamers Impulsive Characteristics**

The Gamer Impulsive Characteristics (GIC) construct was initially measured using four indicators (GIC1–GIC4). However, the results of the analysis showed that the GIC1 indicator had *a low factor loadings* value (0.327), below the recommended minimum threshold of 0.70 (Hair et al., 2019). Therefore, the GIC1 indicator was eliminated from the measurement model. After GIC1 removal, the GIC construct was measured using three indicators (GIC2–GIC4) with a strong loading factor, ranging from 0.767 to 0.969. The reliability results, with α = 0.815, CR = 0.906, and AVE = 0.765, showed good reliability and acceptable convergent validity. With this, the construct of the player's impulsive characteristics is declared valid and reliable to be used in the subsequent analysis.

Summary of Measurement Model Assessment

In general, most of the constructs in this study met the recommended validity and reliability criteria, including *factor loadings* ≥ 0.70, *Composite Reliability* ≥ 0.70, and *Average Variance Extracted* ≥ 0.50. However, there is one indicator in the Player Impulsive Characteristics (GIC1) construct that has a low loading factor (0.327), so that model modifications are made through the

elimination of indicators that do not meet the standard. This step is carried out to improve the quality of the measurement model and ensure that each indicator is able to represent the construct optimally.

Tabel IV. Model fit requirement and result

Hypothes	Symbol	Path			Coef.	S.E	C.R (t-value)	p-value	Result
H1	γ_{11}	Risk Tolerance	→	Gamers Impulsive Attitude	0.249	0,082	3,036	0,002	**Supported**
H2	γ_{21}	FOMO	→	Gamers Impulsive Attitude	0.289	0,079	3,658	***	**Supported**
H3	γ_{12}	Finansial Literacy	→	Gamers Impulsive Attitude	0.297	0,085	3,494	***	**Supported**

Note: Kesesuaian model: χ^2/df = 3.631, GFI = 0.951, TLI = 0.956, CFI = 0.952, IFI = 0.951, and RMSEA = 0.046. Signifikan pada p < 0.05 (*), *p < 0.01 (**), and p < 0.001 (***).

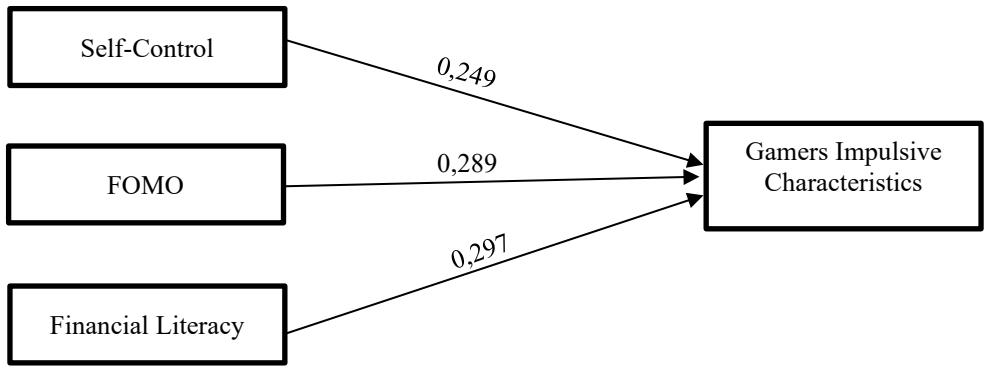

Figure 2. Research Model with Coefficients

The results of the Structural Equation Modeling (SEM) analysis, as shown in Table IV after the model modification through the elimination of indicators that do not meet the criteria, show that the proposed model shows an excellent fit with the data. The conformity index was within the acceptable thresholds recommended by Hair et al. (2019): χ^2/df = 3.631 (< 5.0), GFI = 0.951 (> 0.90), TLI = 0.956 (> 0.90), CFI = 0.952 (> 0.90), IFI = 0.951 (> 0.90), and RMSEA = 0.046 (< 0.08). These values confirm that the measurement and structural models are appropriate and statistically appropriate for hypothesis testing.

The results of the hypothesis test confirm that all proposed relationships between the variables are significant and supported. Self-Control for Gamer Impulsive Attitudes showed a standard path coefficient of 0.249, which expressed a significant influence. Although the coefficients indicate the direction of the relationship statistically positive, conceptually these results suggest that increased self-control tends to be related to a decrease in impulsive behavior. This indicates that a person with a stronger level of self-control has a better ability to control momentary urges while playing games. The Fear of Missing Out (FOMO) to Gamer Impulsive Attitude has a standard coefficient of 0.289, also significant, which implies that gamers who experience a stronger sense of FOMO are more likely to act impulsively during gaming or in-game purchasing activities. Financial Literacy to Impulsive Attitudes of Gamers showed the strongest relationship between the three hypotheses, with a standard coefficient of 0.297, which is statistically significant. Although the indicators in the impulsive construct reflect different aspects, such as behavior, emotional responses, and consequences, the entire

indicator is retained because it theoretically represents one common phenomenon, namely impulsivity in the context of digital consumption. This is in line with the view that impulsivity is a complex construct that is not only reflected in actions, but also in psychological experiences and the effects they cause. This multidimensional approach allows for a more comprehensive understanding of gamers' impulsive behavior, compared to if measured from just one aspect of behavior.

These findings illustrate that higher financial knowledge can make individuals feel more confident in managing their spending decisions, so that in certain contexts it can contribute to impulsive behavior in gaming activities. Overall, all three hypotheses (H1, H2, and H3) are empirically supported, confirming that Self-Control, FOMO (Fear of Missing Out), and Financial Literacy have a significant influence on Gamers' Impulsive Attitudes, respectively. Although statistically indicating a positive direction in the relationship, conceptually self-control still plays a role in suppressing impulsive behavior, while FOMO and financial literacy tend to increase these tendencies in certain contexts. These findings show that there are results that are not entirely in accordance with theoretical assumptions, especially in the relationship between financial literacy and impulsive behaviors that are generally assumed to be negative. This highlights that in the context of online gaming, the interaction between psychological and financial factors can lead to more complex behaviors. Thus, financial literacy does not always serve as a protective factor, but rather it can interact with factors such as confidence and situational pressure, thus influencing the impulsive behavior of gamers.

Discussion

The findings of this study empirically confirm that self-control, fear of missing out (FOMO), and financial literacy significantly influence the impulsive attitude of gamers. The three variables show a significant relationship, reflecting that psychological and financial behavioral factors together shape impulsive spending tendencies among online game players. These results provide a comprehensive perspective on how cognitive, emotional, and knowledge-based elements interact in the context of digital financial decision-making.

Self-Control and Gamers' Impulsive Behavior

The relationship between self-control and impulsive attitude ($\beta = 0.249$) suggests that self-control significantly affects impulsive impulses in gamers. Although the path coefficient points in a statistically positive direction, conceptually the increase in self-control is related to a decrease in impulsive behavior. This underscores that a person with a higher level of self-control tends to be more effective at controlling the urge to make spontaneous purchases in a gaming environment. Similar conclusions are also supported by the study of Duckworth et al. (2019), which affirmed the role of self-control in aligning individual actions with long-term goals. In the context of digital gaming, this ability becomes important because players are often faced with situations that encourage quick responses and instant decisions, such as purchasing exclusive items or participating in limited events. However, situational pressure and persuasive game design can reduce the effectiveness of self-control, so that under certain conditions individuals still show impulsive behavior. Thus, the digital gaming environment can create conditions in which self-control remains an important role, but it is not always able to fully contain impulsive tendencies, especially when influenced by emotional and social factors such as FOMO.

FOMO (Fear of Missing Out) and Gamers Impulsive

The path coefficient between FOMO and impulsive attitudes ($\beta = 0.289$) was the second strongest, confirming that social anxiety and a desire for inclusion strongly drive impulsive financial behavior among gamers. This is in line with Przybylski et al. (2013) and Rozgonjuk et al. (2020), who found that individuals who experience high levels of FOMO are more susceptible to compulsive digital engagement and unplanned spending. In the gaming ecosystem, Nguyen (2025) and King & Delfabbro (2020) observed that limited-time promotions, seasonal events, and comparisons with friends reinforce

these pressures, leading to the urgency to shop quickly in order not to miss out. In the Indonesian context, this pattern is in line with Oktaviana and Irawan (2025), who highlight that FOMO-driven behaviors are very prevalent among Generation Z digital consumers, particularly in the online entertainment sector. The results of this study further show that FOMO acts as an emotional amplifier, mediating the relationship between risk-taking attitudes and impulse buying. Gamers often justify spending as a necessary step to maintain social status within their group, rather than as a rational financial decision, thus reinforcing the emotional and non-cognitive basis of consumption.

Financial Literacy and Impulsive Spending

Interestingly, the study found that financial literacy positively and significantly affected gamers' impulsive attitudes (β = 0.297), contrary to the conventional expectation that higher literacy reduces impulsivity. These findings differ from the conclusions of the meta-analysis of Zhao (2021) and Lusardi & Mitchell (2020), which emphasized the negative relationship between financial literacy and impulsive decision-making. However, this contradiction can be explained by contextual and domain-specific financial confidence, where gamers with moderate to high financial literacy consider themselves "in control," thus justifying discretionary spending as manageable. A similar phenomenon was observed by Broekhoff and Cruijsen (2024), who found that financially literate individuals may still engage in impulsive digital spending if they consider their financial control sufficient. In this case, financial literacy functions less as a restraint and more as a confidence booster, leading to calculated impulsivity. These findings show a nuanced relationship between knowledge and behavior, where literacy does not automatically mean prudence, but can actually increase a person's comfort in facing the risk of digital consumption.

Nonetheless, the literature consistently emphasizes that long-term exposure to impulsive digital spending can erode financial stability, even among financially literate individuals (Suprianto et al., 2023; Rehman & Mia, 2024). Therefore, the results of this study emphasize the need for financial education programs that not only increase knowledge but also foster behavioral discipline and emotional control, especially among young populations involved in digital entertainment spending. Interestingly, the results of the study revealed that financial literacy actually has a positive impact on impulsive impulses, which is contrary to initial hypotheses and theoretical expectations that assume negative relationships. Therefore, this finding is categorized as *an unexpected finding*.

Theoretically, financial literacy should suppress impulsive behavior through improving financial evaluation and planning skills. However, in this context, financial literacy can actually increase individual confidence in making financial decisions, thus encouraging the emergence of the phenomenon of rationalized impulsivity, where individuals continue to make impulsive purchases, but with justification that the action is still within the limits of their financial capabilities. In other words, financial literacy does not always serve as an inhibitor of impulsivity, but in some contexts it can actually increase tolerance for expenses that are considered "controlled". These results can be explained through the concepts of overconfidence and perceived control. Individuals with higher levels of financial literacy tend to have greater confidence in managing their finances, thus feeling in control of financial decisions, including in-game spending. From a theoretical point of view, these findings validate the dual systems theory (Zhao et al., 2021), which states that impulsive behavior arises from the dominance of affective (emotional) systems over cognitive (rational) systems. The interaction between FOMO, self-control, and financial literacy reflects this balance: while FOMO activates an emotional response to gaming stimuli, self-control plays a role in regulating and restraining those impulses, and financial literacy influences the cognitive interpretation of those impulses. However, when affective drivers dominate, even gamers who have a good level of self-control and financial literacy can be tempted to make impulse purchases.

Practically, the study provides insights for financial educators and policymakers. The increasing gamification of consumption demands the integration of digital financial management education into a broader literacy framework, particularly one targeting young gamers. Developers and regulators should also consider the ethical design of microtransaction systems to minimize exploitative mechanisms (e.g., limited-time rewards, gacha systems) that take advantage of impulsivity and social pressure (Zendle & Cairns, 2019; Mahendra et al., 2025). Overall, the study reinforces the idea that

impulsive financial behavior among gamers is not solely a matter of individual choice, but is the result of a complex interaction between psychological predispositions, social influences, and digital platform design. The convergence of self-control, FOMO, and financial literacy creates a multidimensional pattern of behavior in which emotional gratification often overrides rational financial planning. This understanding contributes to the academic discourse on financial behavior in the digital economy, highlighting the importance of integrating psychological insights into financial accounting perspectives.

4. CONCLUSION

The study concluded that self-control, fear of missing out (FOMO), and financial literacy each had a significant influence on gamers' impulsive attitudes. Although statistically indicating a positive direction in the relationship, conceptually self-control still plays a crucial role in suppressing impulsive behavior. This suggests that individuals with higher levels of self-control tend to be better able to control the purchase impulse in the context of a game. Interestingly, financial literacy shows a positive relationship with impulsive behavior, which is a finding that is not in accordance with theoretical expectations (*unexpected finding*) that generally states negative relationships. This indicates that financial literacy does not always function as a protective factor against impulsivity, but in certain contexts it can increase individual confidence in financial decision-making. As a result, individuals continue to make impulse purchases with the justification that the action is still within the limits of their financial capabilities. These findings suggest that impulsive financial behavior among online gamers is not only determined by emotional factors, but is also influenced by the interaction between psychological factors and an individual's level of financial understanding. Higher financial knowledge can increase confidence in managing finances, which under certain conditions actually encourages impulse buying behavior that is more controlled but still frequent. FOMO is shown to amplify the emotional drive to shop through social pressures and limited-time promotions in a gaming environment. Meanwhile, self-control acts as an internal mechanism that assists individuals in managing those impulses, although its effectiveness can decrease in situations fraught with emotional and social stimuli.

From the perspective of financial behavior, these results confirm that impulsive financial actions are the result of interactions between cognitive, affective, and social mechanisms. In practical terms, the study highlights the importance of strengthening digital financial management education that focuses not only on improving financial literacy, but also on developing self-control and emotion regulation in financial decision-making. Overall, the study contributes to the development of the literature on financial behavior in the digital economy, particularly in the context of online gaming, where emotional satisfaction, social influence, and ease of digital transactions play an important role in shaping impulsive financial decisions.

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