

THE EFFECT OF ONLINE GAME MICROTRANSACTIONS ON FINANCIAL MANAGEMENT (STUDY ON THE "SIWA GANGS" COMMUNITY)

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Abstract

The rapid advancement of digital technology has fundamentally transformed consumption patterns, particularly among Generation Z. One of the most prominent manifestations of this transformation is the proliferation of online gaming, accompanied by microtransaction systems that enable players to acquire virtual items using real money. This study examines the influence of online game microtransactions on the financial management practices of members of the 'SIWA GANGS' gaming community. Grounded in Behavioral Finance Theory (Ricciardi & Simon, 2000) and Mental Accounting Theory (Thaler, 1999), this research adopts a quantitative approach with a causal research design. Data were collected from 73 respondents selected through purposive sampling from a population of 270 community members, using a structured Likert-scale questionnaire. The data were analyzed using simple linear regression with SPSS software. The instrument underwent validity testing (Pearson Product Moment Correlation) and reliability testing (Cronbach's Alpha). The study hypothesizes that online game microtransactions exert a significant negative influence on individual financial management, evidenced by reduced saving capacity, weakened expenditure control, and disrupted financial planning. These findings are expected to contribute to the academic discourse on behavioral finance and digital consumption, while providing practical recommendations for game developers, digital payment providers, and policymakers regarding the promotion of responsible financial behavior in the digital ecosystem.

Keywords: *microtransaction, online games, financial management, behavioral finance*



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1. Introduction

The rapid development of digital technology has exerted a significant influence across various dimensions of human life, particularly in transforming the consumption habits of the population, most notably among Generation Z. One of the most prominent manifestations of this transformation is the growing popularity of online games. These games have transcended their original role as mere entertainment and have now become an integral component of contemporary life. The emergence of microtransaction features — which allow players to acquire virtual items through purchases using real money — has contributed to the formation of new consumption patterns. These patterns tend to be instant and readily accessible, yet they frequently generate challenges in personal financial management, potentially threatening individual financial stability amidst the ongoing development of the digital economy.

According to a Newzoo (2024) report, the global number of game players has surpassed 3 billion, with the majority being young players, particularly from Generation Z. In Indonesia, increasing internet penetration — as reflected in data published by the Indonesian Internet Service Providers Association (APJII) — has become a key driver of elevated digital activity within society, including online gaming.

Financial decisions are not always governed solely by rational logic. Many decisions are made under the influence of emotional, psychological, and social factors. As articulated in the Behavioral Finance Theory proposed by Ricciardi and Simon (2000), human beings are frequently not entirely rational in managing their finances, owing to cognitive biases, impulsiveness, and environmental pressures. This is particularly evident in the context of microtransaction purchasing behavior in online games. Many players choose to top up diamonds, purchase skins, or buy battle passes not merely for functional reasons, but to fulfill emotional satisfaction, elevate social status within gaming communities, or avoid the Fear of Missing Out (FOMO) experienced relative to other gamers. If such impulses are left uncontrolled, these habits may generate unforeseen expenditures that can seriously jeopardize an individual's financial stability.

Microtransactions in online games possess distinctive characteristics that systematically encourage consumptive behavior, particularly through mechanisms involving small, recurring expenditures. Transaction values typically range from IDR 10,000 to IDR 100,000, rendering them frequently perceived as financially insignificant.

However, Thaler's (1999) Mental Accounting Theory reveals that individuals tend to underestimate minor expenditures by categorizing them as unimportant. In reality, when accumulated, such expenditures can amount to a substantial sum.

Research conducted by Endyastuti Pravitasari, Virgo Simamora, and Bagas Kautsar Azizal Putra (2024) revealed that microtransactions exert a significant influence on financial management patterns while simultaneously reinforcing consumptive behavioral tendencies among the younger generation. Accordingly, the seemingly trivial top-up habit within gaming communities conceals the potential for long-term risks to members' capacity to manage their finances prudently and responsibly.

Effective financial management requires the ability to plan, control expenditures, save consistently, and distinguish between needs and wants. According to Kasmir (2010), financial management is a process encompassing the planning, organizing, utilization, and control of financial resources optimally. However, in everyday life, a high frequency of microtransactions often impedes these capabilities. Research by Naomi Apriliana Aritonang (2023) demonstrated that repeated purchases of virtual items can undermine individuals' ability to manage expenditures while maintaining financial stability.

Based on this background, this study aims to analyze the influence of online game microtransactions on the financial management of members of the 'SIWA GANGS' community. The significance of this research lies in its potential to provide empirical evidence on the nexus between digital consumption behavior and personal financial management, which remains relatively underexplored within the Indonesian academic context.

1.1 Research Problem

Does online game microtransaction behavior significantly influence the financial management of Generation Z members within the 'SIWA GANGS' community?

1.2 Research Objectives

To analyze the influence of online game microtransaction behavior on the financial management of Generation Z members of the 'SIWA GANGS' community.

2. Literature Review

2.1 Online Game Microtransactions

Microtransactions refer to small-value purchases made within online games using real money to obtain virtual items, such as skins, diamonds, battle passes, or exclusive characters. Although individual transactions are generally relatively small, repeated purchases may accumulate into substantial expenditures. The decision to conduct microtransactions can also be influenced by impulsive behavior, emotional satisfaction, social pressure, promotional offers, and Fear of Missing Out (FOMO). Pravitasari et al. (2024) found that microtransaction behavior can influence financial management patterns and encourage consumptive behavior among younger individuals. Similarly, Aritonang

(2023) reported that repeated purchases of virtual items may interfere with expenditure control and financial stability.

2.2 Financial Management

Financial management refers to the process of planning, allocating, using, and controlling financial resources effectively. Kasmir (2010) explains that financial management involves planning, organizing, utilizing, and controlling financial resources optimally. In the context of individuals, effective financial management can be reflected through financial planning, expenditure control, saving habits, financial record-keeping, and the ability to distinguish between needs and wants. Frequent and impulsive microtransactions may potentially interfere with these practices by increasing discretionary expenditure and reducing the ability to control spending.

2.3 Behavioral Finance Theory

Behavioral Finance Theory explains that financial decisions are not always based on rational considerations but can be influenced by psychological, emotional, and social factors (Ricciardi & Simon, 2000). In online gaming, microtransaction decisions may be driven by impulsive purchasing, emotional satisfaction, social recognition, and FOMO. Consequently, individuals may make spending decisions without fully considering their broader financial priorities.

2.4 Mental Accounting Theory

Mental Accounting Theory proposed by Thaler (1999) explains that individuals tend to categorize and evaluate financial transactions through separate mental accounts. Small expenditures may be perceived as insignificant and therefore receive less attention. In online games, repeated low-value top-ups may consequently be overlooked when individuals assess their total expenditure. This behavior may affect expenditure monitoring, saving, and overall financial management.

2.5 Relationship between Microtransactions and Financial Management

Based on Behavioral Finance Theory and Mental Accounting Theory, frequent online game microtransactions may influence individual financial management. Impulsive purchasing and psychological motivations can encourage excessive spending, while the tendency to underestimate small recurring expenditures may reduce awareness of cumulative spending. Previous studies by Pravitasari et al. (2024) and Aritonang (2023) also indicate that microtransaction behavior is associated with changes in financial management and expenditure control. Therefore, this study examines whether online game microtransaction behavior significantly influences the financial management of members of the “SIWA GANGS” community.

3. Research Method

3.1 Research Design

This study employs a quantitative approach with a causal research design. The selection of the quantitative method is grounded in the research objective of evaluating numerical data obtained through questionnaire distribution to measure relationships among variables. As Sugiyono (2019) notes, the quantitative approach is rooted in positivist philosophy, which seeks to test hypotheses on specific samples or populations through statistical analysis.

The causal research design was chosen to identify the independent and dependent variables and to determine the cause-and-effect relationship between them. The theoretical foundation draws upon Behavioral Finance Theory (Ricciardi & Simon, 2000) and Mental Accounting Theory (Thaler, 1999). Data analysis was conducted using simple linear regression via SPSS software.

3.2 Research Location and Duration

This study focuses on the 'SIWA GANGS' community. Given that the community's primary activities occur in the digital domain, the research was not conducted in a specific physical location but was carried out through the digital platforms primarily used for community interaction — namely WhatsApp and Discord. The study was conducted over a three-month period spanning April through June 2026.

3.3 Operational Definition of Variables

3.3.1 Independent Variable (X): Online Game Microtransaction

Online game microtransaction is defined as the activity of purchasing virtual goods within online gaming platforms using real money, conducted repeatedly in relatively small monetary amounts. The variable is measured using the following indicators:

- a. Frequency of virtual item purchases within online games
- b. Monetary amount expended per transaction
- c. Type of items purchased (skins, diamonds, battle passes, premium characters, etc.)
- d. Emotional or psychological drives motivating transactions
- e. Influence of promotions, discounts, and limited-duration events on purchase decisions

3.3.2 Dependent Variable (Y): Financial Management

Financial management is defined as a process encompassing the planning, organising, direction, and optimal control of financial resources to achieve specific goals. Based on Kasmir (2010), the variable is measured using the following indicators:

- a. Ability to plan finances in both the short and long term
- b. Control of expenditure in accordance with a predetermined budget

- c. Consistent and planned saving habits
- d. Regular financial record-keeping (income and expenditure)
- e. Ability to distinguish primary needs from secondary wants

Table 2.1 Operational Variables

Variable	Definition	Indicators	Scale	Source
Microtransaction Game Online (X)	Activity of purchasing virtual items in online games using real money, conducted repeatedly and digitally (Hamari, 2015; Lehdonvirta).	1. Frequency of virtual item purchases 2. Transaction amount 3. Item type (skin, diamond, battle pass) 4. Emotional drive 5. Promotional/event influence	Likert Scale 1–5	Hamari (2015); Ricciardi & Simon (2000)
Financial Management (Y)	Process of planning, organising, utilising, and controlling financial resources optimally to meet needs and achieve financial goals (Kasmir, 2010).	1. Financial planning ability 2. Expenditure control 3. Saving habits 4. Regular financial record-keeping 5. Ability to differentiate needs from wants	Likert Scale 1–5	Kasmir (2010); Gitman (2012); Kapoor (2012)

Source: Primary Data, Processed (2026)

3.4 Population, Sample, and Sampling Technique

According to Sugiyono (2018), a population is defined as the domain of generalization comprising objects or subjects with specific characteristics determined by the researcher for study and as the basis for drawing conclusions. The population of this study encompasses all members of the 'SIWA GANGS' community who have engaged in microtransaction activities — that is, the purchase of virtual items using real money within their respective games. Based on membership data obtained from community administrators, the total population consists of 270 individuals.

The sample was determined using the Slovin formula, as follows:

$$n = N / (1 + N \cdot e^2)$$

Where:

n = sample size;

N = population size (270 persons);

e = tolerated error rate (10% or 0.1).

Calculation:

$$n = 270 / (1 + 270 \times (0.1)^2)$$

$$= 270 / (1 + 2.7)$$

$$= 270 / 3.7 \approx 73 \text{ respondents.}$$

Accordingly, this study involves 73 members of the 'SIWA GANGS' community as the research sample. The sampling technique employed is purposive sampling, with the following inclusion criteria: (1) active players or former players of online games; and

(2) individuals who have experience performing microtransaction activities (top-ups) within online games.

3.5 Data Type and Source

This study employs a quantitative data approach, encompassing numerical data as well as qualitative data that has been converted into numerical form (Sugiyono, 2019). Data were collected through questionnaire distribution to respondents, with each item measured using a Likert scale to facilitate the transformation of responses into numerical data for subsequent statistical analysis.

Primary data were collected directly from respondents through questionnaire completion, comprising information related to microtransaction frequency and patterns, financial literacy levels, and respondents' financial management conditions. Secondary data were sourced from previously available references, including books, academic journals, OJK reports, Newzoo 2024 publications, APJII data, and other studies relevant to the research topic.

3.6 Instrument Testing

Instrument testing constitutes a critical stage that must be performed prior to full-scale data collection. This step ensures that each questionnaire item possesses the capacity to measure the intended variable (validity) and produces consistent data when applied repeatedly (reliability).

- a. Validity testing was conducted using the Pearson Product Moment Correlation technique, by calculating the correlation between each item score and the total score. An item is declared valid if the correlation coefficient (r -calculated) exceeds the r -table value at a significance level of 5% ($\alpha = 0.05$).
- b. Reliability testing was performed using the Cronbach's Alpha method, which is appropriate for Likert-scale instruments. According to Ghazali (2018), a variable is considered reliable if the Cronbach's Alpha value exceeds 0.60.

Table 2.2 Research Instrument Items

No.	Variable	Indicator	Item	Statement
1	Microtransaction (X)	Purchase Frequency	X1	I very frequently conduct top-up or item purchases within online games in the past month.
2			X2	The intensity of my microtransactions within games tends to increase over time.
3		Transaction Amount	X3	Each top-up transaction I conduct falls within the range of IDR 10,000–100,000.
4			X4	The cumulative total of real money I have spent on online games is considerably large.
5	Item Type		X5	I frequently use real money to purchase skins, diamonds, battle passes, or exclusive characters in games.

No.	Variable	Indicator		Item	Statement
6				X6	I am willing to conduct transactions for cosmetic items (character visuals) to maintain my status in the "SIWA GANGS" community.
7		Emotional/Psychological Drive		X7	I conduct microtransactions due to impulsive/spontaneous drives for instant emotional satisfaction while playing.
8				X8	I feel anxious or experience FOMO (Fear of Missing Out) if I do not purchase new trending items or skins.
9		Promotional Influence		X9	Seasonal events, special discounts, limited-time offers, or gacha systems prompt me to make purchases.
10				X10	The ease of digital payment methods (e-wallets: GoPay, OVO, Dana) makes it easier to decide to purchase in-game items.
11	Financial Management (Y)	Financial Ability	Planning	Y1	I proportionally allocate my allowance/income across primary needs, savings, and entertainment.
12				Y2	I establish a maximum budget ceiling before deciding to top up for a game.
13		Expenditure Control		Y3	I am able to restrain myself from topping up for online games when my monthly expenditure has exceeded its limit.
14				Y4	The ease of microtransactions makes it difficult for me to control my routine monthly expenditure.
15		Saving Habits		Y5	I consistently set aside a portion of my allowance or income at the beginning of each period for savings.
16				Y6	Expenditure on online games frequently reduces the amount I could otherwise allocate to future savings.
17		Financial Keeping	Record-	Y7	I habitually record all personal income and expenditure items in an organised manner.
18				Y8	I disregard and do not record top-up expenditure because I consider the amount trivial (mental accounting).
19		Differentiating from Wants	Needs	Y9	I always prioritise primary needs (food, tuition/school fees) over the desire to purchase in-game items.
20				Y10	I sometimes postpone or reduce fulfilment of primary needs in order to satisfy the desire to purchase virtual in-game items.

Source: Primary Data, Processed (2026)

3.7 Data Analysis Technique

This study employs a questionnaire as the primary data collection technique. A closed questionnaire was developed using a Likert scale ranging from 1 to 5, as presented in the following table:

Table 2.3 Likert Scale Measurement

Response	Score
Strongly Agree (SA)	5
Agree (A)	4
Neutral (N)	3
Disagree (D)	2
Strongly Disagree (SD)	1

Source: Sugiyono (2019), adapted

Respondents meeting the established criteria were provided access to an online survey via Google Forms, disseminated through social media and digital channels including Instagram, WhatsApp, and Discord, as well as the online gaming community platform.

3.7.1 Classical Assumption Tests

- Normality Test:** Determines whether the residuals of the regression model are normally distributed. The Kolmogorov-Smirnov or Shapiro-Wilk test is employed; data are considered normally distributed if the significance value exceeds 0.05.
- Multicollinearity Test:** Evaluates the presence of high correlation among independent variables. Multicollinearity is considered absent if the Variance Inflation Factor (VIF) is less than 10 and the tolerance value exceeds 0.1.
- Heteroscedasticity Test:** Identifies differences in residual variance across observations. The Glejser test is used; heteroscedasticity is considered absent if the significance value exceeds 0.05.

3.7.2 Simple Linear Regression Analysis

Simple linear regression analysis is employed to understand the influence of one independent variable on one dependent variable. The general regression model applied in this study is as follows:

$$Y = a + bX + e$$

Where:

Y = Financial Management (dependent variable);

a = constant (value of Y when X = 0);

b = regression coefficient (magnitude of X's influence on Y);

X = Online Game Microtransaction (independent variable); e = error term.

3.7.3 Hypothesis Testing

t-Test (Partial): Used to determine the partial influence of the independent variable on the dependent variable. If $t\text{-calculated} > t\text{-table}$ or significance value < 0.05 , H_0 is rejected and H_1 is accepted (significant influence exists).

Coefficient of Determination (R^2): Measures the extent to which the model explains variance in the dependent variable. Values range from 0 to 1; a higher R^2 indicates greater explanatory power of the independent variable.

4. Results and Discussion

4.1 Respondent Characteristics

Respondent profiles are summarized by income level and microtransaction experience in Tables 2 and 3.

Table 2. Respondent Distribution by Income/Allowance Level

Income Category (IDR/month)	Frequency	Percentage (%)
< 500,000	22	30.14
500,000 – 1,500,000	9	12.33
1,500,001 – 3,000,000	16	21.92
> 3,000,000	26	35.62
Total	73	100.00

Source: Primary data, processed (2026)

Table 3. Respondent Distribution by Microtransaction Experience

Experience	Frequency	Percentage (%)
Have conducted microtransactions	72	98.63
Have not conducted microtransactions	1	1.37
Total	73	100.00

Source: Primary data, processed (2026)

The data reveal considerable income diversity among respondents, with the largest group (35.62%) reporting monthly income exceeding IDR 3,000,000, followed by those earning below IDR 500,000 (30.14%). Notably, 98.63% of respondents had direct experience with online game microtransactions, confirming the representativeness of the sample for the research objectives.

3.2 Instrument Validity and Reliability

All instrument items passed validity and reliability tests, as summarized in Tables 4, 5, and 6.

Table 4. Validity Test Results — Microtransaction Variable (X)

Item	r-calculated	r-table (n=73, $\alpha=5\%$)	Status
X1	0.718	0.230	Valid
X2	0.704	0.230	Valid

Item	r-calculated	r-table (n=73, $\alpha=5\%$)	Status
X3	0.680	0.230	Valid
X4	0.760	0.230	Valid
X5	0.852	0.230	Valid
X6	0.561	0.230	Valid
X7	0.793	0.230	Valid
X8	0.499	0.230	Valid
X9	0.849	0.230	Valid
X10	0.733	0.230	Valid

Source: Primary data, processed (2026)

Table 5. Validity Test Results — Financial Management Variable (Y)

Item	r-calculated	r-table (n=73, $\alpha=5\%$)	Status
Y1	0.704	0.230	Valid
Y2	0.686	0.230	Valid
Y3	0.629	0.230	Valid
Y4	0.570	0.230	Valid
Y5	0.707	0.230	Valid
Y6	0.671	0.230	Valid
Y7	0.553	0.230	Valid
Y8	0.504	0.230	Valid
Y9	0.620	0.230	Valid
Y10	0.536	0.230	Valid

Source: Primary data, processed (2026)

Table 6. Reliability Test Results

Variable	Cronbach's Alpha	Status
Microtransaction Game Online (X)	0.892	Reliable
Financial Management (Y)	0.815	Reliable

Source: Primary data, processed (2026)

All 10 items for variable X yielded r-calculated values above 0.230, confirming validity. Items X5 ($r = 0.852$) and X9 ($r = 0.849$) demonstrated the strongest correlations, corresponding to item type purchased and the influence of promotional events, respectively. For variable Y, all 10 items were similarly valid, with Y5 ($r = 0.707$) and Y1 ($r = 0.704$) showing the highest correlations. Cronbach's Alpha values of 0.892 (X) and 0.815 (Y) indicate very high internal consistency, well above the threshold of 0.80 for excellent reliability (Ghozali, 2018).

4.3 Classical Assumption Tests

Table 7. Kolmogorov-Smirnov Normality Test Results

Variable	KS Statistic	Sig.	Status
Microtransaction Game Online (X)	0.104	0.379	Normal
Financial Management (Y)	0.132	0.141	Normal

Source: Primary data, processed (2026)

Table 8. Glejser Heteroscedasticity Test Results

Variable	Coefficient	Sig.
Microtransaction Game Online (X)	-0.0075	0.855

Source: Primary data, processed (2026)

The Kolmogorov-Smirnov test yielded significance values of 0.379 (X) and 0.141 (Y), both exceeding the 0.05 threshold, confirming normal residual distribution. The Glejser test produced a significance value of 0.855 for variable X, well above 0.05, indicating the absence of heteroscedasticity. Classical assumptions for regression analysis were thus fully satisfied.

3.4 Descriptive Statistics

Table 9. Descriptive Statistics of Research Variables

Variable	N	Mean	Std. Dev.	Min – Max
Microtransaction Game Online (X)	73	33.47	8.69	10 – 47
Financial Management (Y)	73	33.66	7.60	10 – 50

Source: Primary data, processed (2026)

Variable X recorded a mean score of 33.47 (SD = 8.69), indicating moderate microtransaction engagement (midpoint of the 10–50 range = 30). Variable Y exhibited a mean of 33.66 (SD = 7.60), reflecting moderate financial management capability among community members, with room for improvement.

3.5 Simple Linear Regression Analysis

Table 10. Simple Linear Regression Results

Model	Coefficient (B)	t-statistic	Sig.
Constant (a)	12.810	4.624	0.000
Microtransaction Game Online (X)	0.623	8.549	0.000

Source: Primary data, processed (2026)

The resulting regression equation is: $Y = 12.810 + 0.623X$. The constant value of 12.810 indicates the baseline level of financial management in the absence of microtransaction activity. The regression coefficient of 0.623 signifies that each one-unit increase in microtransaction activity is associated with a 0.623-unit increase in the financial management score. The positive coefficient suggests that higher microtransaction engagement corresponds to greater measurable effects on financial management patterns.

3.6 Hypothesis Testing

Table 11. t-Test Results (Partial Effect)

Variable	t-calculated	t-table	Sig.	Result
Microtransaction → Financial Management	8.549	1.994	0.000	Significant

Source: Primary data, processed (2026)

Table 12. Coefficient of Determination (R^2)

Model	R	R Square (R^2)
Microtransaction (X) → Financial Management (Y)	0.712	0.507

Source: Primary data, processed (2026)

The t-test results confirm that the calculated t-value (8.549) substantially exceeds the t-table value (1.994), with a significance level of $0.000 < 0.05$. Consequently, H_0 is rejected and H_1 is accepted: online game microtransactions exert a statistically significant effect on the financial management of SIWA GANGS community members. The R value of 0.712 indicates a strong correlation between the two variables, while $R^2 = 0.507$ reveals that 50.7% of the variance in financial management is attributable to microtransaction activity. The remaining 49.3% may be explained by variables not included in this model, such as digital financial literacy, income level, lifestyle factors, and social environment.

3.7 Discussion

The findings of this study are consistent with previous research. Pravitasari, Simamora, and Putra (2024) similarly established that online game microtransactions significantly influence financial management among Generation Z, demonstrating that repeated virtual item purchases intensify consumptive behavior and destabilize financial equilibrium. Aritonang (2023) corroborated these results, finding that microtransactions negatively affect savings capacity and expenditure control among young Indonesians.

The theoretical alignment with Behavioral Finance (Ricciardi & Simon, 2000) is evident in the role of emotional drivers. The moderate mean scores for items X7 (impulsive buying motivation, mean = 3.40) and X8 (FOMO, mean = 2.41) indicate that psychological rather than rational factors substantially contribute to microtransaction decisions. This aligns with the behavioral finance premise that emotional and cognitive biases systematically influence financial choices.

The Mental Accounting Theory (Thaler, 1999) further illuminates why respondents tend to overlook the cumulative financial impact of microtransactions. Item Y8 (failure to record top-up expenditures, mean = 3.10) suggests that a notable proportion of respondents disregard microtransaction recording due to perceived insignificance. As emphasized by Thaler, this cognitive underweighting of small expenditures can produce substantial long-term financial consequences when purchases recur regularly.

The R^2 value of 50.7% is notable for a single-predictor model, affirming that microtransaction activity is a dominant determinant of financial management quality within this community. The remaining variance points to additional factors—such as financial literacy levels, self-control capacity, family financial socialization, and social media influence—that warrant investigation in future research.

5. Conclusion and Suggestions

5.1 Conclusion

This study demonstrates that online game microtransactions exert a positive and statistically significant effect on the financial management of Generation Z members within the "SIWA GANGS" community ($t = 8.549 > t\text{-table } 1.994$; $\text{sig.} = 0.000 < 0.05$), with the regression equation $Y = 12.810 + 0.623X$ indicating that each one-unit increase in microtransaction activity corresponds to a 0.623-unit change in financial management behavior. The coefficient of determination ($R^2 = 0.507$) further reveals that microtransaction activity accounts for 50.7% of the variance in financial management outcomes, affirming its role as a dominant predictor in this context. These findings are theoretically grounded in Behavioral Finance Theory (Ricciardi & Simon, 2000), which attributes impulsive purchasing decisions to emotional and psychological drivers such as FOMO and social pressure, and in Mental Accounting Theory (Thaler, 1999), which explains the tendency to underestimate recurring small expenditures—ultimately resulting in significant cumulative financial burden.

5.2 Suggestions

Based on the findings and conclusions of this study, the following suggestions are proposed for relevant stakeholders:

1. For Game Developers and Publishers

Game developers are encouraged to design microtransaction systems that incorporate responsible spending features, such as optional spending limit reminders, transaction history notifications, and transparent pricing displays. Reducing the reliance on psychological triggers—particularly time-limited offers and gacha-based mechanics that exploit Fear of Missing Out (FOMO)—may help mitigate impulsive purchasing behavior among players, especially within the Generation Z demographic.

2. For Digital Payment Providers

Digital payment providers (e.g., e-wallet services such as GoPay, OVO, and Dana) are advised to develop features that promote financial mindfulness, such as monthly spending summaries specific to gaming transactions, spending cap options, and cooling-off periods for high-frequency top-up activities. Such measures would help counteract the mental accounting bias, wherein users tend to underestimate the cumulative impact of small, recurring expenditures.

3. For Policymakers and Regulators

Policymakers, particularly those overseeing digital consumer protection and financial literacy programs, are encouraged to formulate regulations that require greater transparency in microtransaction pricing and probability disclosures (particularly for gacha or loot box systems). Furthermore, integrating digital financial literacy education into school curricula and public awareness campaigns may help equip Generation Z with the skills necessary to manage digital consumption responsibly.

4. For Members of Gaming Communities (including "SIWA GANGS")

Community members are advised to enhance their financial self-regulation by establishing predetermined budget limits prior to engaging in microtransactions, consistently recording all expenditures—including seemingly minor top-up transactions—and prioritizing essential financial needs over impulsive virtual purchases. Increased awareness of emotional and social triggers, such as peer pressure and FOMO, may further support more rational financial decision-making.

5. For Future Researchers

Given that microtransaction activity accounts for only 50.7% of the variance in financial management outcomes, future studies are encouraged to incorporate additional variables—such as digital financial literacy, self-control, income level, family financial socialization, and social media influence—to provide a more comprehensive understanding of the factors affecting financial management among online gaming communities. Employing a longitudinal or mixed-methods design may also yield deeper insights into the long-term behavioral patterns associated with microtransaction consumption.

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