

THE EFFECT OF EASE OF PAYMENT AND USER EXPERIENCE ON USER RETENTION THROUGH MONETIZATION MODELS IN DIGITAL GAMES

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Article Info	Abstract
<i>Article history:</i> <i>Received: 16 December 2025;</i> <i>Accepted: 22 December 2025;</i> <i>Published: 29 December 2025</i> <i>Keyword:</i> <i>Ease of payment, User experience,</i> <i>Monetization model, User retention,</i> <i>Digital games</i>	This study aims to analyze the influence of Ease of Payment (X1) and User Experience (X2) on User Retention (Z), mediated by Monetization Models (Y), addressing empirical inconsistencies in the literature regarding post-adoption behavior in digital games. Utilizing a quantitative explanatory design, data were collected from 158 students at the Faculty of Economics and Business, Universitas Negeri Jakarta, who are active microtransaction users. The hypothesis was tested using Partial Least Squares-Structural Equation Modeling (PLS-SEM). The results confirmed that both X1 and X2 significantly and positively influence Y and that X2 is the strongest direct predictor of Z ($\beta = 0.723$). Critically, the hypotheses related to the mediating role of Y (H6) and (H7) and the direct effect $Y \rightarrow Z$ (H3) were rejected. This outcome supports the study's main contribution: the postulation of Functional Isolation, which concludes that financial commitment (Monetization) is an independent utility transaction that does not reinforce psychological commitment (Retention). The primary implication is that for sustainable long-term engagement, developers must strategically prioritize investment in core User Experience (X2) rather than relying on the Monetization Model to secure user loyalty.

1. INTRODUCTION

The development of digital technology has significantly changed the way people interact with various forms of entertainment, including games. Gaming is no longer simply a form of recreation; it has evolved into a high-value industry that plays a crucial role in the global digital ecosystem. According to a GoodStats report (2024), Indonesia ranks second in the world in terms of internet usage for gaming, with a percentage reaching 95.3%. This data indicates that gaming has become an integral part of Indonesians' digital lifestyles.

One significant phenomenon in the modern gaming industry is microtransactions, which involve purchasing digital items such as skins, accessories, or additional characters using real money. This system is at the heart of the freemium monetization model, where users can play for free while developers earn revenue from in-game transactions (Das, 2023). Recent studies have shown that perceived value and user experience influence players' intentions to continue playing and to purchase more in-game content (Hamari et al., 2020). For example, enjoyment positively affects players' intentions to keep playing, but may reduce their willingness to spend on premium content. Similarly, social and economic values, as well as perceived quality, shape both continued use and purchase intentions, highlighting the complex factors that drive player engagement in freemium games.

However, for players to translate these intentions into actual spending, a convenient and secure payment system is essential. The emergence of e-wallet services such as GoPay, OVO, DANA, and ShopeePay has made transactions faster, safer, and more efficient. Research consistently shows that Ease of Payment (X1) has a significant positive

influence. Aditya et al. (2021) found that (X1) increases sales and purchasing behavior. Similarly, Osly Usman & Firman Aulia Mulyawan (2024) and Elshifa et al. (2025) confirm that convenience through systems like GoPay and QRIS positively affects purchase interest and decisions, simultaneously strengthening user trust. These findings collectively support (X1)'s direct role as a strong driver for conversion within Monetization Models (Y).

Conversely, the influence of (X1) is not always consistent and carries inherent risks. Regarding behavioral risk, Muhammad Yahfi et al. (2025) found that payment ease reduces the pain of paying, which potentially drives impulsive buying. This behavior can lead to financial regret, thus indirectly threatening long-term User Retention (Z). Furthermore, the convenience can compromise security: a literature review (Ferrouhi & Sliman, 2023) citing Slade et al. (2015) and Khalilzadeh et al. (2017) indicates that perceived risk has a significant negative influence on usage intention, and impaired trust will undermine (Z). Finally, (X1) is sometimes found to be non-significant, as studies by Jung et al. (2020) and Ly et al. (2022) (cited in Ferrouhi & Sliman, 2023) found no evidence of influence from Effort Expectancy on payment service intention to use, suggesting (X1) alone is insufficient to retain users.

Beyond payment convenience, the quality of User Experience (X2) holds a central role in the success of a game, encompassing functional to immersive elements. Positive (X2) proves to be crucial. Marjani Asniati & Fourqoniah (2023) show that (X2) significantly strengthens repeat purchases intention and increases loyalty. Furthermore, Ramadhan et al. (2023) and Widjieanto (2021) assert that UX enhances customer satisfaction and loyalty, with trust even mediating the relationship to user commitment. These findings support (X2)'s vital role in the success of (Y).

However, other research indicates clear limitations on the influence of (X2). Firstly, regarding the functional aspects, the key UX component of Perceived Ease of Use was found to be not significant toward mobile wallet adoption (Okonkwo et al., 2022). Likewise, Khalilzadeh et al. (2017) (cited in Ferrouhi & Sliman, 2023) found no influence of facilitating conditions (technical facility support) on behavioral intention. Secondly, the aspect of Social Influence (a UX component related to user interaction) was also found to be non-significant toward mobile wallet usage intention in the study by Tang et al. (2014) (cited in Ferrouhi & Sliman, 2023). Lastly, regarding the value proposition, most critically in the gaming context, Shelstad et al. (2020) found that various UX scales (GUESS-24, ENJOY, UEQ-S) performed significantly better in predicting Continuance Intention (up to 74.6% variance explained) than Purchase Intention (Y), for which the models only explained between 10.4% and 27.5% of the variance. This highlights that UX's power to drive (Y) is severely limited by other factors, such as Perceived Value and Social Value, creating a significant gap between player satisfaction and actual spending.

The identified empirical inconsistencies can be categorized into two competing logics: (a) monetization as a reinforcement mechanism, where spending fosters psychological attachment and player persistence, and (b) monetization as a purely transactional utility, where spending represents a momentary exchange that does not necessarily influence long-term commitment.

Despite the identified inconsistencies concerning the influence of Ease of Payment (X1) and User Experience (X2), the mediating role of Monetization Models (Y) is posited as the logical bridge connecting these antecedents to User Retention (Z). A successful freemium monetization model relies heavily on its ability to keep users engaged and satisfied in the long run. The literature confirms that properly implemented monetization strategies can directly strengthen retention. For instance, Böffel, Würger, Müsseler, & Schlittmeier (2022) explicitly found that character customization via cosmetic microtransactions enhances players' subjective experience and fosters a sense of ownership and attachment to the game, which is crucial for player persistence (retention). Furthermore, Gaikwad & Wafgaonkar (2024) assert that transparency and ethical monetization practices are vital for maintaining player trust and satisfaction, forming the essential basis of Z. Conversely, Sellgren (2024) found that community norms and peer pressure significantly impact purchasing, indicating that social loyalty and attachment (an aspect of Z) can drive purchases (Y), thereby establishing a strong reciprocal relationship between Y and Z.

However, the direct effectiveness of the independent variables remains inconsistent. X1 presents risks of promoting impulsive buying (Rita et al., 2024) or, conversely, being non-significant due to concerns like perceived risk. Similarly, X2 shows high predictive power for Z but is severely limited in predicting Purchase Intention (Y) (Shelstad et al., 2020). This significant divergence, where the foundational factors for satisfaction do not translate consistently into monetization highlights a critical Research Gap. The simultaneous effectiveness of X1 and X2 in successfully driving Y and the subsequent net effect on Z remains unresolved. This gap is compounded by the lack of integrated research analyzing this complex mediation model ($X1, X2 \rightarrow Y \rightarrow Z$) within a specific demographic context in Indonesia. Consequently, this study aims to analyze and empirically prove the influence of Ease of Payment and User Experience on User Retention, mediated by Monetization Models, specifically among students of the Faculty of Economics and Business (FEB) at Universitas Negeri Jakarta (UNJ).

2. LITERATURE REVIEW

This chapter provides the theoretical, conceptual, and empirical foundations supporting the proposed research model. Specifically, the literature review integrates established technology adoption and behavioral theories into a unified explanatory framework. The Unified Theory of Acceptance and Use of Technology (UTAUT/TAM) is

employed to explain the antecedent variables influencing user behavior, Expectation-Confirmation Theory (ECT) underpins post-adoption outcomes related to user retention, while the Theory of Planned Behavior (TPB) supports the conceptualization of monetization as purchase intention. By positioning each theory according to its role within the model, this chapter clarifies the theoretical logic underlying the relationships among Ease of Payment (X1), User Experience (X2), Monetization Models (Y), and User Retention (Z).

2.1 Theoretical and Conceptual Background

2.1.1 Foundational Theories

A. Unified Theory of Acceptance and Use of Technology (UTAUT) / TAM

The Unified Theory of Acceptance and Use of Technology (UTAUT) has established itself as one of the most developed and intensive models for testing technology adoption, as it is considered robust and trusted for application across various technologies (Momani, 2020). The core principle of the model is to predict Behavioral Intention using several constructs, including Effort Expectancy (Perceived Ease of Use) and Performance Expectancy (Perceived Usefulness). In this study, UTAUT serves as the theoretical foundation for the independent variables: Ease of Payment (X1) reflects Effort Expectancy in the transaction process, while User Experience (X2) incorporates the Performance Expectancy aspect concerning game quality and system effectiveness. Accordingly, UTAUT/TAM in this study primarily explains the antecedent mechanisms that shape users' transactional and experiential evaluations prior to monetization and retention outcomes.

B. Expectation-Confirmation Theory (ECT)

The Expectation-Confirmation Theory (ECT) is the primary framework used to explain post-adoption behavior, focusing on why users decide to continue using a service over the long term. ECT posits that continuance intention is determined by the level of Satisfaction achieved and the extent to which the user's initial expectations are confirmed (AlSokkar et al., 2024). In its recent developments, the ECT model also emphasizes the importance of Trust in influencing satisfaction and repeat purchase intention. Therefore, ECT serves as the main theoretical foundation for the User Retention (Z) variable, where satisfaction derived from User Experience (X2) and Monetization Models (Y) is expected to be the key driver of long-term retention. Thus, ECT is explicitly positioned to explain post-adoption outcomes, particularly User Retention (Z), as the long-term consequence of satisfaction derived from prior experiences and monetization encounters.

C. Theory of Planned Behavior (TPB)

The Theory of Planned Behavior (TPB) is a social psychology theory proven capable of predicting Behavioral Intention through three main determinants: Attitude, Subjective Norms, and Perceived Behavioral Control (Ajzen, 1991). This model emphasizes that intention is the most significant driver of actual behavior. TPB is highly relevant to Monetization Models (Y), which are modeled as purchase intention. In the context of this study, Attitude is influenced by (X2) (positive experience), Perceived Behavioral Control is linked to (X1) (ease of payment), while Subjective Norms support the finding that social pressure can influence purchase decisions. In this study, TPB functions as the theoretical foundation for the mediation mechanism, where Monetization Models (Y) represent behavioral intention that bridges antecedent perceptions and post-adoption commitment.

2.1.2 Conceptual Definitions and Dimensions of Variables

A. Ease of Payment (X1)

Ease of Payment is defined as the degree of perceived simplicity and convenience experienced by the user when completing in-game transactions, encompassing the smoothness and speed of the process. In the context of digital payments, this variable is extended to include the following critical factors:

1. Perceived Ease of Use (PEOU): The simplicity of learning and operating the payment system
2. Convenience: The perception that the payment process is fast and efficient
3. Trust and Security: The user's confidence in the system that their data and funds are safe, which is highly critical in e-wallet transactions (Ferrouhi & Sliman, 2024)
4. Knowledge/Competence: The user's ability to understand how the e-wallet system works without needing assistance
5. Accessibility: The ability to access the payment service anytime and anywhere to complete the transaction

B. User Experience (X2)

User Experience (UX) is the holistic set of perceptions, emotions, and reactions a player has resulting from their interaction with the mobile gaming product. It covers both the functional quality and the emotional enjoyment. The main dimensions include:

1. Enjoyment: The level of emotional pleasure, excitement, and satisfaction derived while playing the game, often driven by attractive visual design
2. Usability: The practical quality of the system, such as intuitive controls and the absence of disruptive bugs (Shelstad et al., 2020)
3. Social Interaction: The sense of connection, camaraderie, and added excitement derived from interacting with other players within the game environment.

C. Monetization Models (Y)

Monetization Models are measured through the player's intention to purchase in-app items or services (microtransactions). This variable reflects the extent to which the game's monetization mechanism successfully triggers purchase intention. The considered dimensions are:

1. Purchase Intention: The conscious willingness of the player to spend money
2. Perceived Value: The player's assessment that the item's price is commensurate with the quality, benefit, or competitive advantage received (Böffel et al., 2022)
3. Transparency and Fairness: The clarity of the purchasing system and the ethical integrity of the monetization model (Gaikwad & Wafgaonkar, 2024)
4. Payment Options: The availability of various payment methods within the game, ensuring convenience for the player.

D. User Retention (Z)

User Retention is defined as the player's continuance intention and long-term commitment to remain engaged with the game. As a post-adoption behavior, this variable is grounded in ECT. Its dimensions include:

1. Continuance Intention: The explicit plan or desire of the player to continue playing in the future (AlSokkar et al., 2024)
2. Loyalty/Recommendation: The willingness to recommend the game to others, acting as a post-consumption behavior that indicates satisfaction and commitment
3. Future Purchase: The willingness to spend money on the game again in the future
4. Attachment/Loyalty: The sense of ownership or emotional bond that reinforces the willingness to remain loyal (Böffel et al., 2022)

2.2 Empirical Review and Hypothesis

The Influence of Ease of Payment (X1) on Monetization Models (Y)

Research consistently shows that Ease of Payment (X1) has a significant positive influence: Aditya et al. (2021) found that X1 increases sales and purchasing behavior. Similarly, Osly Usman & Firman Aulia Mulyawan (2024) and Elshifa et al. (2025) confirm that convenience through systems like GoPay and QRIS positively affects purchase interest and decisions, simultaneously strengthening user trust. These findings collectively support X1's direct role as a strong driver for conversion within Monetization Models (Y). Despite this strong positive correlation, this convenience carries behavioral risks: Rita et al. (2024) demonstrate that microtransactions can facilitate impulse buying tendencies, suggesting that extreme ease may lead to buyer's remorse, thereby creating an inconsistency that warrants further investigation.

H1: Ease of Payment (X1) has a positive and significant effect on Monetization Models (Y).

The Influence of User Experience (X2) on Monetization Models (Y)

A positive User Experience (enjoyment, satisfaction) is expected to build a favorable attitude toward the game, logically translating into a willingness to spend (purchase intention, Y). Nevertheless, Shelstad et al. (2020) found that while UX scales successfully predicted Retention (Z), they were severely limited in predicting Purchase Intention (Y), highlighting a significant divergence in the literature.

H2: User Experience (X2) has a positive and significant effect on Monetization Models (Y).

The Influence of Monetization Models (Y) on User Retention (Z)

The relationship between Monetization and Retention is complex, but generally positive when ethical. Böffel, Würger, Müsseler, & Schlittmeier (2022) explicitly showed that cosmetic microtransactions foster a sense of ownership and attachment, which is essential for player persistence (Z). Furthermore, Gaikwad & Wafgaonkar (2024) emphasize that the Monetization Model (Y) must be implemented with transparency and fairness to maintain player satisfaction and avoid negatively affecting Z. The relationship is also reciprocal, as Sellgren (2024) found that community norms and social pressure (aspects of Z) significantly influence purchasing behavior (Y).

H3: Monetization Models (Y) have a positive and significant effect on User Retention (Z).

The Influence of Ease of Payment (X1) on User Retention (Z)

Smooth and quick transactions, which are linked to Performance Expectation in mobile payment systems, contribute to overall user satisfaction, thereby encouraging continuance intention (Z) (Ferrouhi & Sliman, 2024). Conversely, this relationship is complex because Ferrouhi & Sliman (2024) also emphasizes that Trust is a critical predictor of adoption and continued use. Consequently, excessive ease of payment that compromises security can increase perceived risk (e.g., security breaches), which is known to negatively impact long-term user trust and User Retention.

H4: Ease of Payment (X1) has a positive and significant effect on User Retention (Z).

The Influence of User Experience (X2) on User Retention (Z)

This relationship is consistently shown to be strong. According to the ECT, a high-quality User Experience (X2) leads to high satisfaction, which is the primary driver of Continuance Intention (Z). Shelstad et al. (2020) also confirmed that UX scales are highly effective in predicting Z.

H5: User Experience (X2) has a positive and significant effect on User Retention (Z).

Monetization Models as Mediator

The study hypothesizes that Monetization Models (Y) function as a critical mediator for both independent variables (X1 and X2) against User Retention (Z). This mediation is crucial given the empirical inconsistencies found in the direct paths. For User Experience (X2), Shelstad et al. (2020) noted that while X2 highly predicts Z (Retention), its ability to predict Y (Purchase Intention) is severely limited. Thus, Y is necessary to bridge this psychological gap: a player who enjoys the game (X2) and subsequently makes a purchase (Y) develops a sense of ownership and attachment (Böffel et al., 2022), which solidifies their commitment to retention (Z). Similarly, for Ease of Payment (X1), Y mediates the behavioral risk. While X1 facilitates transactions, its extreme convenience can lead to impulsive buying (Rita et al., 2024). The Monetization Model (Y) must therefore be tested as the psychological mechanism that dictates whether the ease of transaction results in positive satisfaction or regret. The outcome is contingent on Y being perceived as fair and transparent (Gaikwad & Wafgaonkar, 2024) to maintain player trust and long-term retention. These collective findings justify the complex mediation model.

H6: Monetization Models (Y) significantly mediates the relationship between Ease of Payment (X1) and User Retention (Z).

H7: Monetization Models (Y) significantly mediates the relationship between User Experience (X2) and User Retention (Z).

2.3 Conceptual Framework

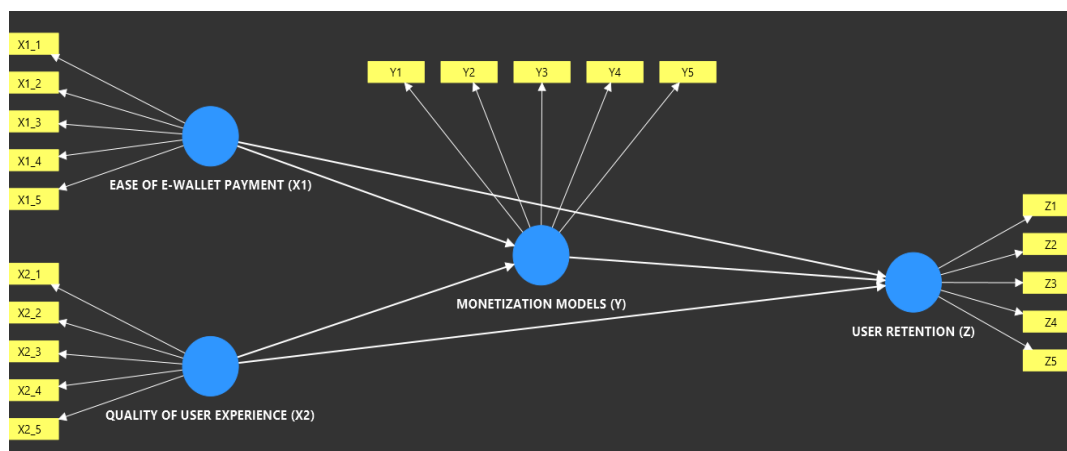


Figure 1. Relationship Diagram Between Variables

Source: Author (2025)

3. RESEARCH METHODOLOGY

3.1 Research Design

This study applied a quantitative explanatory research design to examine the relationship between Ease of Payment (X1) and User Experience (X2) on User Retention (Z), with Monetization Model (Y) as the mediating variable. The data were collected through a structured questionnaire using a Likert scale and analyzed with Partial Least Squares-Structural Equation Modeling (PLS-SEM) using SmartPLS software.

3.2 Population and Sample

3.2.1 Study Population

The population for this study consists of all students from the Faculty of Economics and Business (FEB) at Universitas Negeri Jakarta (UNJ) who are identified as active players of mobile games containing microtransactions. This specific focus allows the researcher to gather data from the Gen Z demographic, who are actively adopting digital payment systems and represent the primary consumers of in-game monetization mechanisms.

3.2.2 Sampling Method and Size

3.2.2.1 Sampling Method

This research employs a Non-Probability Sampling approach using the Purposive Sampling technique. This method is deliberately chosen to ensure that the collected sample possesses the specific characteristics and experiences directly relevant to the research variables under investigation (Ease of Payment and Monetization Models), thereby providing valid data for hypothesis testing.

3.2.2.2 Inclusion Criteria

Based on the Purposive Sampling technique, respondents must satisfy the following specific inclusion criteria:

1. Status and Location: Active students of the Faculty of Economics and Business (FEB) at Universitas Negeri Jakarta
2. Gaming Activity: Must have played video games containing microtransactions (e.g., Mobile Legends, Genshin Impact, etc.) within the last three months

3. Purchase Experience: Must have made in-game purchases using e-wallet services (e.g., DANA, OVO, GoPay, ShopeePay, etc.)

3.2.2.3 Determination of Sample Size

The selection of sample size and analytical technique was guided by the study's objective to test both direct and mediating effects within a post-adoption behavioral model. PLS-SEM was selected due to its suitability for predictive analysis, complex mediation structures, and relatively moderate sample sizes.

Following Hair et al. (2021), the minimum sample size was determined using the indicator-to-sample ratio and statistical power considerations. With 20 indicators included in the model, a minimum threshold of 100 respondents was required, while 155 respondents were targeted to ensure robust estimation and sufficient explanatory power. The final sample of 158 respondents therefore satisfies both methodological requirements.

3.3 Research Time and Location

The study was conducted from October to November 2025 at the Faculty of Economics and Business, Universitas Negeri Jakarta. The study focused on students within this faculty who met the sampling criteria. Data collection was carried out online through a structured questionnaire to accommodate respondents' accessibility during the research period.

3.4 Type and Source of Data

The study utilized primary quantitative data obtained directly from respondents through the online questionnaire. Each response reflected the respondent's perception and behavior related to the variables studied.

3.5 Data Collection Technique

Data were collected using an online questionnaire created via Google Form. The survey link was distributed through internal communication channels such as faculty, class, and study program groups to ensure accessibility to participants who met the criteria. The instrument was divided into four sections corresponding to the research variables: Ease of Payment, User Experience, Monetization Model, and User Retention. Each variable was measured by five statement items. Demographics questions were also included to capture respondents' background information.

3.6 Research Instrument and Data Analysis

The questionnaire consisted of 20 indicator items representing the four main variables. All items were measured using a five-point Likert scale to capture respondents' levels of agreement, with the following answer options:

Table 1. Likert Scale Measurement

Rating	Description
5	Strongly Agree
4	Agree
3	Undecided/Neutral
2	Disagree
1	Strongly Disagree

Source: Sugiyono (2019)

The analysis was conducted using a two-stage PLS-SEM approach. First, the measurement model (outer model) was assessed to ensure the reliability and validity of the 20 indicators, which is crucial given the conceptual proximity between experience and retention. Second, the structural model (inner model) utilized bootstrapping to test the significance of the direct and mediating paths, specifically to resolve the competing logics between monetization as a utility versus a reinforcement mechanism

3.7 Operationalization of Variables

This table presents the conceptual definition, dimension, operational indicators, and source used to measure each variable in this study.

Table 2. Operationalization and Conceptual Table of Research Variables

Variable	Conceptual Definition	Dimension	Operational Indicators	Source	Scale
Ease of Payment (X1)	The perceived degree of ease, speed, and security felt by users in completing in-game	Perceived Ease of Use	1. I find using an <i>e-wallet</i> for in-game payments very easy.	Pal et al. (2021)	5-point Likert
		Convenience	2. <i>E-wallets</i> make in-game purchases faster and more convenient.		

	transactions using <i>e-wallet</i> services.	Trust and Security	3. I find the <i>e-wallet</i> system safe for in-game transactions.		
		Knowledge/C ompetence	4. I understand how to use an <i>e-wallet</i> for in-game transactions without needing assistance.		
		Accessibility	5. I can access my <i>e-wallet</i> anytime I need to make in-game transactions.		
User Experience (X2)	The holistic set of perceptions, emotions, and reactions generated by a player from interacting with the mobile gaming product, encompassing both functional quality and emotional enjoyment.	Enjoyment	1. I find the visual display and design of the video game attractive.	Shelstad et al. (2020)	5-point Likert
			2. The video game I play provides an enjoyable experience.		
		Usability	3. I feel comfortable with the controls and navigation in the video game.		
			4. The video game runs smoothly without frustrating lags or bugs.		
		Social Interaction	5. I feel that social interaction in the video game adds to the excitement of playing.		
Monetization Models (Y)	The player's intention to make in-app purchases driven by the perceived value, transparency, and incentives offered by the game's monetization mechanisms.	Perceived Value	1. I feel that the price of items in the video game is commensurate with their quality or benefit.	Böffel et al. (2022)	5-point Likert
		Transparency & Fairness	2. I feel that the purchase system in the video game is transparent and easy to understand.	Gaikwad & Wafgaonkar (2024)	
		Payment Options	3. The video game provides various payment methods that suit my needs.	Gaikwad & Wafgaonkar (2024)	
		Purchase Intention	4. I feel that promotions or discounts in the video game encourage me to purchase items.	Rita et al. (2024)	
		Value Added	5. I feel that purchasing items in the game adds value to my overall playing experience.	Böffel et al. (2022)	

User Retention (Z)	The player's continuous intention and long-term commitment to remain engaged with the game post-adoption.	Continuance Intention	1. I play this video game regularly.	Sharma et al. (2020)	5-point Likert
			2. I intend to continue playing this video game in the future.		
		Loyalty/Recommendation	3. I would recommend this video game to others.		
		Future Purchase	4. I am willing to purchase additional items in this video game in the future.		
		Attachment	5. I feel emotionally attached to the video games I play.		

Source: Author (2025)

4. RESULT AND DISCUSSION

4.1 Result

4.1.1 Descriptive Results

This study utilized 158 respondents who met the specified inclusion criteria. The demographic characteristics of the respondents are detailed in Figure 4. The variables used for descriptive analysis included Gender, Major/Program Study, Year of Enrollment, Video Game Playing History, and Micro-Transaction History.

Table 3. Descriptive Statistics

Category	Sub-Category	Frequency (N)	Percentage (%)
Gender	Male	73	46,20%
	Female	85	53,80
Major	APPLIED BACHELOR'S DEGREE IN DIGITAL MARKETING	15	9,49%
	BACHELOR'S DEGREE IN ACCOUNTING	22	13,92%
	BACHELOR'S DEGREE IN DIGITAL BUSINESS	40	25,32%
	BACHELOR'S DEGREE IN MANAGEMENT	19	12,03%
	BACHELOR'S DEGREE IN OFFICE ADMINISTRATION	20	12,66%
	BACHELOR'S DEGREE IN BUSINESS EDUCATION	23	14,56%

	BACHELOR'S DEGREE IN ECONOMICS EDUCATION	19	12,03%
Year of Enrollment	2022	36	22,77%
	2023	67	42,40%
	2024	55	34,83%
Video Game History	Played video games that contain microtransactions in the last 3 months	140	88,61%
	Never played video games that contain microtransactions in the last 3 months	18	11,39%
Micro-Transaction History	Made Micro-Transaction with e-wallet	30	18,99%
	Never Made Micro-Transaction e-wallet	128	81,01%
Total Respondents		158	100.0%

Source: Author (2025)

4.1.2 Descriptive Statistics of Questionnaire Items

The results in Table 4.2 show that the majority of items received mean scores above 4.0, indicating a generally High Level of Agreement from the respondents across most constructs. Items X1_5, Y2, and Y5 recorded the highest mean scores (4.4), suggesting a very strong positive perception regarding these specific attributes. Item X2_2 and Z5 recorded the lowest mean scores (3.9), although still indicating moderate to high agreement. The standard deviations, mostly ranging from 0.72 to 1.10, suggest a moderate level of dispersion in the responses, with items like X2_2, X1_4, and Z5 showing the highest heterogeneity in opinion with Standard Deviation equal or more than 1.00.

Table 4. Descriptive Statistics of Questionnaire Items

Construct	Item Code	Mean	SD	Interpretation
X1	X1_1	4.2	0.94	High Agreement
	X1_2	4.3	0.83	High Agreement
	X1_3	4.3	0.83	High Agreement
	X1_4	4.2	1.02	High Agreement
	X1_5	4.4	0.78	Very High Agreement
X2	X2_1	4.1	0.90	High Agreement
	X2_2	3.9	1.10	Moderate/High Agreement
	X2_3	4.3	0.83	High Agreement
	X2_5	4.0	1.06	High Agreement

Y	Y1	4.2	0.75	High Agreement
	Y2	4.4	0.77	Very High Agreement
	Y3	4.2	0.74	High Agreement
	Y4	4.1	0.78	High Agreement
	Y5	4.4	0.72	Very High Agreement
Z	Z1	4.1	1.00	High Agreement
	Z2	4.1	0.98	High Agreement
	Z3	4.1	0.90	High Agreement
	Z4	4.1	0.90	High Agreement
	Z5	3.9	1.10	Moderate/High Agreement

Source: Author (2025)

4.1.3 Measurement Model Assessment (Validity and Reliability)

4.1.3.1 Convergent Validity (Outer Loadings)

Convergent validity was first assessed through the Outer Loadings of each indicator onto its respective construct. According to Ghozali & Latan (2015), the ideal outer loading value is above (0.70). However, values are still considered tolerable down to (0.50), and indicators with values below 0.50 must be dropped from the analysis as they are deemed invalid in measuring their construct.

Table 5. Outer Loadings of Measurement Indicators

Construct	Indicator Code	Outer Loading (λ)	Threshold (>0.50)	Status
X1	X1_1	0.757	≥ 0.50	Valid
	X1_2	0.650	≥ 0.50	Valid
	X1_3	0.606	≥ 0.50	Valid
	X1_4	0.727	≥ 0.50	Valid
	X1_5	0.850	≥ 0.50	Valid
X2	X2_1	0.877	≥ 0.50	Valid
	X2_2	0.814	≥ 0.50	DELETED
	X2_3	0.561	≥ 0.50	Valid
	X2_4	0.041	< 0.50	DELETED
	X2_5	0.739	≥ 0.50	Valid
Y	Y1	0.802	≥ 0.50	Valid
	Y2	0.702	≥ 0.50	Valid
	Y3	0.749	≥ 0.50	Valid

	Y4	0.773	≥ 0.50	Valid
	Y5	0.711	≥ 0.50	Valid
Z	Z1	0.852	≥ 0.50	Valid
	Z2	0.832	≥ 0.50	Valid
	Z3	0.706	≥ 0.50	Valid
	Z4	0.856	≥ 0.50	DELETED
	Z5	0.834	≥ 0.50	Valid

Source: Author (2025)

The table above demonstrates that the indicator X2_4, with a loading of (0.041), was significantly below the minimum accepted threshold of (0.50). Consistent with the guidelines, X2_4 was deleted from the measurement model to ensure validity. The analysis was then re-run, and all remaining 19 indicators were retained as their loadings met the requirement of being above (0.50).

4.1.3.2 Internal Consistency Reliability and Final Validity Check

The internal consistency reliability was confirmed using Cronbach's Alpha (α) and Composite Reliability (CR), both requiring a threshold of (0.70). Convergent validity was finally assessed by the Average Variance Extracted (AVE), requiring a threshold of (0.50).

Table 6. Final Construct Reliability and Validity

Construct	Cronbach's Alpha (α)	Composite Reliability (CR)	Average Variance Extracted (AVE)	Assessment
X1	0.771	0.844	0.522	Valid & Reliable
X2	0.681	0.821	0.607	Acceptable
Y	0.803	0.864	0.560	Valid & Reliable
Z	0.876	0.910	0.669	Valid & Reliable

Source: Author (2025)

The Cronbach's Alpha (α) for Construct X2 is (0.681), which is slightly below the conservative (0.70) threshold. This reduction in internal consistency is directly attributed to the purging process. Construct X2 originally had five items but was reduced to three items (X2_1, X2_3, X2_5) after the deletion of X2_4 (due to low loading) and X2_2 (due to failed discriminant validity). Since Cronbach's Alpha is highly sensitive to the number of indicators, the significant reduction in item count is the primary factor for the marginally lower Alpha value.

However, because the value is well above the (0.60) threshold and the more crucial Composite Reliability remains high (CR = 0.821), the reliability of Construct X2 is deemed acceptable for the purpose of this research, following guidelines for exploratory studies.

4.1.3.3 Discriminant Validity (Fornell-Larcker Criterion)

Discriminant validity was initially assessed using the Fornell-Larcker Criterion. The initial results revealed a severe lack of discriminant validity between Construct X2 and Construct Z, with the Fornell-Larcker criterion failing. This issue stemmed from significant Cross-Loadings between the indicators of X2 and Z, suggesting a high degree of conceptual overlap. To achieve a valid measurement model, a second indicator purging process was conducted based on the cross-loading results:

Table 7. Construct Loading & Cross-Loading

Indicator	Construct Loading (Original)	Cross-Loading (Other Construct)	Rationale
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X2_2	0.813 (on X2)	0.834 (on Z)	Deleted. The Cross-Loading value on Z (0.834) was higher than the loading on its intended construct X2 (0.813), violating the fundamental cross-loading criterion.
Z4	0.856 (on Z)	0.877 (on X2)	Deleted. The Cross-Loading value on X2 (0.877) was higher than the loading on its intended construct Z (0.856), confirming severe conceptual ambiguity.

Source: Author (2025)

The final results, obtained after indicator refinement (deletion of X2_4, X2_2, and Z4), are presented below:

Table 8. Final Discriminant Validity (Fornell-Larcker Criterion)

Construct	X1	X2	Y	Z
X1	0.723			
X2	0.567	0.779		
Y	0.559	0.667	0.748	
Z	0.423	0.725	0.480	0.826

Source: Author (2025)

As shown in Figure 8, the diagonal values ($\sqrt{\text{AVE}}$) are consistently higher than the corresponding off-diagonal values (correlation coefficients) in their respective rows and columns. The final measurement model successfully meets the Fornell-Larcker Criterion, confirming that all constructs are empirically distinct from each other.

4.1.3.4 Theoretical Implications of Indicator Refinement

The refinement and removal of several indicators during the measurement model assessment should not be interpreted solely as a statistical correction. Instead, the overlap particularly between User Experience and User Retention indicators reflects their close conceptual proximity in post-adoption behavior. Prior literature has consistently positioned experiential satisfaction as a core antecedent of continuance intention, indicating that emotional engagement and enjoyment are inherently intertwined with long-term commitment. Therefore, the observed indicator overlap reinforces the theoretical view that experiential factors exert a dominant influence on retention, rather than signaling a measurement weakness.

4.1.4 Structural Model Assessment and Predictive Power

4.1.4.1 F-Squared

Table 9. Results of Effect Size

Construct	X1_	X2_	Y	Z
X1_			0.095	0.001
X2_			0.356	0.551
Y				0.000
Z				

Source: Author (2025)

The analysis indicates that the effect of $X1 \rightarrow Y$ is Small (0.095), while the effect of $X2 \rightarrow Y$ is Negligible (0.001). Conversely, the paths leading to Z demonstrate significant contributions: $X1 \rightarrow Z$ is a Large Effect (0.356) and $X2 \rightarrow Z$ is also a Large Effect (0.551). Crucially, the effect of $Y \rightarrow Z$ is Negligible (0.000), suggesting that Y may not play a significant role as a mediator or direct predictor for Z.

4.1.4.2 R-Squared

Table 10. R-square Result

Construct	R-square	R-square adjusted	Interpretation
Y	0.493	0.486	Moderate
Z	0.526	0.517	Moderate

Source: Author (2025)

Both R-Squared values fall into the Moderate predictive power category. The model explains 49.3% of the variance in Y and 52.6% of the variance in Z.

4.1.4.3 Hypothesis Testing Results

Table 11. Hypothesis Testing Results

Construct	Original sample (O)	Sample mean (M)	Standard deviation (STDEV)	T statistics (O/STDEV)	P values
X1 → Y	0.266	0.274	0.069	3.851	0.000
X1 → Z	0.020	0.026	0.090	0.226	0.821
X2 → Y	0.516	0.516	0.071	7.314	0.000
X2 → Z	0.723	0.726	0.064	11.297	0.000
Y → Z	-0.014	-0.016	0.090	0.152	0.879
X1 → Y → Z	-0.004	-0.005	0.026	0.142	0.887
X2 → Y → Z	-0.007	-0.007	0.047	0.149	0.882

Source: Author (2025)

4.2 Discussion

4.2.1 Key Findings

The analysis of the structural model provides a robust synthesis of the factors influencing monetization and retention, confirming some theoretical predictions while highlighting significant empirical divergences. The model strongly supported the paths leading to the mediator, Monetization Models (Y), demonstrating the joint influence of convenience and experience.

Hypothesis H1 (Ease of Payment (X1) → Y) was supported ($\beta = 0.266$, P-value = 0.000), aligning with the Effort Expectancy principle of the Unified Theory of Acceptance and Use of Technology (UTAUT) and prior research on mobile payment adoption (Pal et al., 2021), confirming that reducing transactional friction facilitates purchasing.

Hypothesis H2 (User Experience (X2) → Y) was also strongly supported ($\beta = 0.516$, P-value = 0.000). This finding, which establishes X2 as the primary predictor of Y, is novel, as it pushes back against the observations by Shelstad et al. (2020) regarding the limited ability of UX scales to predict Purchase Intention. The results indicate that positive user enjoyment is now directly and powerfully converted into commercial willingness, affirming the central role of Attitude from the Theory of Planned Behavior (TPB).

In contrast, the factors driving User Retention (Z) were clearly segregated. Hypothesis H5 (User Experience (X2) → Z) was overwhelmingly supported ($\beta = 0.723$, P-value = 0.000), confirming that X2 is the dominant driver of Z. This result is in perfect alignment with the Expectation-Confirmation Theory (ECT) and prior findings (Shelstad et al., 2020), cementing the principle that post-adoption satisfaction is the primary mechanism securing Continuance Intention.

However, the parallel hypothesis H4 (Ease of Payment (X1) → Z) was rejected (P-value = 0.821). This suggests that while X1 supports immediate utility, its convenience alone does not build the long-term loyalty required for retention. This finding supports the theoretical complexity noted by Ferrouhi & Sliman (2024), where the extreme ease of payment can compromise the perception of Trust or increase Perceived Risk, ultimately offsetting any contribution to long-term continuance intention.

4.2.2 Theoretical Integration and Advancement of Current Views

The most critical advancement offered by this study is the empirical rejection of the hypothesized role of monetization. Hypothesis H3 (Monetization Models (Y) → User Retention (Z)) was firmly rejected (P-value = 0.879). This finding directly challenges key tenets in the literature, particularly the notion (Böffel et al., 2022) that microtransactions foster a sense of ownership that reinforces player persistence.

Furthermore, this led to the definitive rejection of the mediation hypotheses, H6 and H7 (P-values > 0.880 for indirect effects). The conceptual proximity observed between User Experience and User Retention provides additional context for interpreting the non-significant role of monetization in strengthening long-term engagement. While experiential satisfaction naturally translates into continuance intention, monetization mechanisms operate through a different functional logic. The absence of a significant direct or mediating effect of Monetization Models on retention supports the postulation of Functional Isolation, in which financial transactions function as isolated, momentary utility exchanges, whereas retention emerges as an intrinsic and experiential commitment. This finding advances current perspectives by demonstrating that the strong influence of User Experience on retention is fully direct, rendering financial commitment unnecessary as a psychological bridge.

4.2.3 Shortcomings, Limitations, and Future Research Postulations

The interpretation of these results is subject to several practical limitations. The study employed a cross-sectional design, which may not fully capture the dynamic nature of user retention over time. Furthermore, the Monetization Models (Y) construct did not differentiate between planned, value-driven purchases and impulsive

buying (Rita et al., 2024), a notable limitation given that impulsive transactions may induce buyer's remorse and potentially contribute to the observed non-significant effect of monetization on retention.

Based on these findings, future research should advance new theoretical postulations. First, the Asymmetric Role of Monetization Theory should be empirically tested by examining whether the primary function of monetization is not to enhance retention, but rather to avoid undermining it. This would require modeling Fairness and Transparency (Gaikwad & Wafgaonkar, 2024) as moderators on the dominant User Experience (X2) → User Retention (Z) relationship. Second, the rejection of H4 warrants the introduction of Trust as a full mediator between Ease of Payment (X1) and User Retention (Z), which would clarify how transactional convenience must be carefully balanced to secure long-term loyalty, as suggested by mobile payment adoption literature (Ferrouhi & Sliman, 2024).

5. CONCLUSION

This study successfully investigated the structural relationships between Ease of Payment (X1), User Experience (X2), Monetization Models (Y), and User Retention (Z) in the digital gaming context, resulting in a complex pattern of acceptance and rejection among the proposed working hypotheses. The analysis confirmed the foundational hypotheses: (H1) and (H2) were proved, establishing that both payment convenience and high user experience significantly drive monetization, the latter proving to be the stronger predictor. Furthermore, (H5) was definitively proved, reaffirming the Expectation-Confirmation Theory (ECT) by confirming (X2) as the dominant factor securing long-term retention.

However, the study yielded a critical theoretical divergence, as hypotheses (H3), (H4), (H6), and (H7) were all conclusively rejected. This constitutes the primary contribution to science: the empirical rejection of (H3) (Monetization Models → User Retention) challenges the established literature that microtransactions foster ownership and persistence (Böffel et al., 2022), leading to the postulation of Functional Isolation. This new theoretical perspective argues that (Monetization) is a momentary transactional decision, entirely separate from (Retention), which is a purely experiential commitment, thereby rendering the financial commitment factor redundant as a psychological bridge.

This finding advances the current understanding by emphasizing that the quality of the gaming experience alone determines long-term user commitment. Despite these insights, the research faced limitations, particularly the constraint of the cross-sectional design and the inability to distinguish between impulsive and value-driven purchases within the (Y) construct, which may have contributed to the observed non-significant effect on retention.

Therefore, guidelines for future research must focus on testing the newly postulated theories, including exploring the Asymmetric Role of Monetization Theory that (Y)'s primary role is to not harm (Z) by introducing Fairness and Transparency as moderators, and testing Trust as a critical full mediator for the rejected (X1) → (Z) path, as suggested by mobile payment adoption literature.

Finally, the institutional-systemic implications of these results are clear: game developers and publishers must fundamentally reassess their operational priorities. The failure of (Y) to secure (Z) implies that reliance on aggressive monetization strategies will not compensate for poor user experience; thus, financial policy should strictly prioritize investment in core (X2) (enjoyment and usability) teams over monetization optimization teams. Furthermore, regulatory bodies and institutional advisors should recommend policies that ensure transparency in monetization practices, as ethical implementation is crucial to maintaining the user trust necessary for overall system health and sustainable long-term user engagement.

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