

## The Influence of Casual Mobile Games and Play-to-Earn Games on User Attraction Mediated by the TapTap Application on Android OS and iOS Platforms

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### ABSTRACT

This study analyzes the influence of mobile game types—especially casual and play-to-earn games—on user attractiveness, considering the mediating role of the TapTap application on Android and iOS platforms. A contradictory phenomenon in the mobile gaming industry, where casual games generate high interest and engagement while potentially financially rewarding play-to-earn games tend to attract lower user interest, serves as the background for this study. Marketplaces are used as mediation variables to represent the quality of user experience, including user experience, accessibility, engagement, ease of navigation, and cross-platform application stability. The research employed a quantitative approach with a survey of the gamer community in the Greater Jakarta area through the Indie Game Studio organization, analyzed using descriptive methods and t-statistic-based mediation analysis. The results are expected to make theoretical contributions to the study of consumer behavior and digital business, as well as provide practical implications for developers in designing inclusive mobile games oriented toward user experience. The study has limitations in terms of regional scope and the types of games examined. The research findings provide theoretical implications by highlighting the importance of inclusive user experience and accessibility for gamers with disabilities. From a practical perspective, the results can assist game developers and platform providers in designing marketing strategies and app quality that enhance user engagement.

**Keywords:** casual mobile games; earning mobile games; user attraction; gamer web3; digital business android platform.

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### INTRODUCTION

The mobile game industry has continued to grow rapidly over the last decade, offering a variety of game types along with the increasing penetration of smartphones and ease of access to application distribution platforms on Android and iOS operating systems (Khan, 2023). This growth ranges from casual games, which are easy to play, to 'play-to-earn' games that offer earning potential (Dwijaputra et al., 2025). Mobile games are significant not only as a means of entertainment but also as a monetization medium through in-app purchases and other payment models (Tarute et al., 2017). They have evolved to become part of the digital economy ecosystem through various monetization models, including advertising, in-app purchases, rewarded game schemes, and Web3 technology (Japutra et al., 2022). However, an interesting and contradictory phenomenon has emerged where casual games, which focus on simple entertainment, show higher levels of user interest, participation, and engagement than 'play-to-earn' games or games that offer immediate financial gain.

Theoretically, games that provide financial incentives are expected to have greater appeal because they offer real economic value to users (Hsu & Chen, 2018). However, user behavior data shows that factors such as enjoyment, ease of play, and convenience in the user experience often outweigh the potential financial returns (Doğan-Südaş et al., 2023).

(Lai & Zheng, 2018) These statistics show that mobile games are highly profitable, with the highest market share among all video game platforms, providing nearly \$100,000 in revenue for developers and game development houses. However, to achieve such high revenue, developers must be strategic in their monetization strategies (Medium.com, Udonis – How Profitable Are Mobile Games).

Data from Medium also reveals that the top five mobile game markets, based on the number of downloads, are dominated by the following countries: According to data.ai in 2023, the top three mobile gaming markets by consumer spending on Google Play are the United States, South Korea, and Japan. On iOS, the top markets are the United States, China, and Japan.

This indicates that the appeal of mobile games is not only determined by the type of business model but also by the quality of the user experience when accessing and interacting with game distribution platforms (Syvertsen, 2022).

In this context, the role of mobile applications as a medium for distribution and interaction is an important factor that can mediate the relationship between the type of game and user appeal. TapTap, a cross-platform game distribution platform for both Android and iOS, operates similarly to Play Store and App Store but offers a more distinctive, informative, and interactive user experience. This includes aspects of user experience, accessibility, ease of navigation, and application stability. The quality of user interaction with this application can either strengthen or weaken the perception and interest in the available games (Sharma, 2024).

This development has given rise to an interesting phenomenon related to user attraction.

The development of the mobile game industry shows a contradictory phenomenon. Casual mobile games, which are essentially for entertainment and do not offer financial benefits, actually have a very high level of participation and a large number of players. In fact, players voluntarily purchase items through in-app purchases to improve their character's abilities or achieve high scores in the game.

On the other hand, mobile games that explicitly offer the potential for financial earnings, such as prize-based puzzle games, Web3-based games, and casino-style games integrated with digital payment systems (e-wallets and bank transfers), show relatively low participation rates. This condition reflects the gap between the economic value offered and the actual appeal felt by users.

This phenomenon raises questions about non-financial factors that affect the attractiveness of users when choosing mobile games. Application experience, risk perception, ease of navigation, and interface comfort on Android and iOS platforms are thought to play an important role in shaping the user's decision to participate in a game.

In addition, this phenomenon becomes increasingly complex when associated with differences in user characteristics. Both groups of users may have different sensitivities to aspects of accessibility, application complexity, and interaction design, so their responses to casual and play-to-earn games are not always aligned and may even be contradictory.

Therefore, a study is needed to explain how the types of mobile games affect user appeal, as well as how mobile applications and Android and iOS platforms mediate these relationships.

A number of previous studies have examined the relationship between mobile game types and user engagement rates, particularly in the context of monetization models such as in-app purchases and paid games. However, most of these studies are based on the assumption of the economic rationality of users, where games offering potential financial benefits are perceived as having higher appeal.

On the other hand, research on income-based games, including casino-style games and Web3-based games, focuses more on risk, regulation, and the behavioral aspects of gambling, without directly comparing them to casual games, which are non-financial in nature. As a result, the existing literature has not been able to explain the contradictory phenomenon where casual games show higher levels of participation and attraction than games offering financial returns.

Furthermore, the role of mobile applications and Android and iOS platforms in shaping the gaming experience is generally treated as a contextual factor or direct variable, rather than as a mediating variable that explains how game type influences user appeal. Therefore, there is still a research gap in understanding how the type of mobile game affects user appeal through the mediation of applications on Android and iOS platforms, such as TapTap.

The development of the increasingly complex mobile game industry not only presents a wide variety of game types but also gives rise to new dynamics in user behavior. The difference in business models between casual games and play-to-earn games, as well as the diversity of user characteristics, shows that the attractiveness of mobile games cannot be explained solely from economic or entertainment aspects (Rita et al., 2024). Additionally, mobile applications, as the main medium of user interaction with games, play an important role in shaping the gaming experience, which ultimately affects user interest and engagement.

The contradictory phenomenon showing high interest in casual games compared to 'play-to-earn' or income-based games raises academic questions that need to be studied more deeply (Setiati, 2022). The difference in application usage experience on Android and iOS platforms further strengthens the urgency of formulating research problems in a systematic and targeted manner. Therefore, the formulation of the problem in this study is focused on the relationship between the type of mobile game, application mediation, and user appeal.

Based on this description, the formulation of the problem in this study is as follows: 1) How do the types of casual mobile games and 'play-to-earn' games affect user appeal? 2) What is the role of mobile applications in mediating the influence of mobile game types on user appeal? 3) Is the role of mobile app mediation different on Android and iOS platforms in influencing user appeal? 4) How do each of these variables contribute to explaining the phenomenon of high user interest in casual games compared to 'play-to-earn' games?

Along with the rapid development of the mobile game industry and the increasing variety of business models applied, understanding the factors that affect user attractiveness is important, both from an academic and practical perspective. Differences in user characteristics, as well as variations in application usage experience on Android and iOS platforms, demand a more comprehensive and inclusive study. Therefore, this study was compiled not only to describe the phenomenon that occurred but also to provide a systematic understanding of the relationship between the variables studied (Tondeur et al., 2017).

Based on the background and formulation of the problem that has been described, the objectives of this study are as follows: 1) To analyze the influence of casual mobile games and 'play-to-earn' games on user attraction, to understand how the characteristics of the two types of games differ in shaping user interest, comfort, satisfaction, and intention to continue playing. 2) To identify and compare the appeal of casual mobile games and 'play-to-earn' games, to understand whether there is a difference in perception and gaming experience between the two groups of users. 3) To analyze the role of mobile applications as a mediating variable in the relationship between mobile game types and user appeal, specifically through aspects of user experience, accessibility, ease of navigation, and application stability. 4) To analyze the differences in the role of mobile application mediation on Android and iOS platforms, to see whether platform characteristics also affect the level of appeal of mobile games for users. 5) To make a conceptual and practical contribution to the study of digital business and digital consumer behavior, especially for game developers and stakeholders in designing mobile games that are inclusive, user-experience-oriented, and in accordance with the needs of diverse user segments (Sung et al., 2016).

Consumer behavior is the foundation of the science in this research domain. Consumer behavior refers to all activities, processes, and decisions of individuals or groups in obtaining, using, and evaluating products, services, experiences, or ideas to meet their needs and desires (Bouzaabia et al., 2024). Consumer behavior is not only limited to the act of buying, but also includes pre-purchase processes such as information search and evaluation of alternatives, as well as post-purchase processes such as satisfaction, learning, and post-consumption evaluation. Thus, consumer behavior is seen as a dynamic process that continuously evolves and is influenced by various internal and external factors. Consumer behavior in the digital environment is understood as a dynamic process involving motivation, emotions, value perception, and the social context in consumption decision-making. (Tsai, 2024) explain that consumer behavior includes the process before, during, and after purchase, including information searching, alternative evaluation, user experience, and post-consumption evaluation.

In the digital context, emotional factors and user experience play an increasingly dominant role. (Bouzaabia et al., 2024) explain that consumer behavior is shaped by three main components: internal psychological processes, decision-making processes, and the influence of the social and cultural environment. In digital shopping, emotional factors such as happiness, anxiety, or fear of falling behind trends can encourage consumers to act quickly without deep rational considerations. In addition, consumer behavior is also influenced by the level of effort expended in decision-making. (Bouzaabia et al., 2024) distinguish consumer behavior into high-effort decision-making and low-effort decision-making. In low-effort decisions, consumers tend to rely on emotional impulses, habits, situational cues, and social pressures, making them more susceptible to impulsive behavior. (Kim & Baek, 2018) in the UTAUT2 model added that hedonic motivation, habit, and price value have a direct effect on the adoption of consumer technology, which is then widely used in the study of the behavior of mobile app and mobile game users.

## METHOD

This study uses a quantitative approach with a survey design. The research population consists of mobile game users, particularly the gamer community in Greater Jakarta. Data was collected through a structured questionnaire that measured: (1) the type of mobile game played (casual or 'play-to-earn'), (2) user appeal, including interest in playing, convenience, satisfaction, and intention to continue, and (3) application mediation aspects, such as user experience (UX), accessibility, ease of navigation, and app stability on Android and iOS. Data analysis was carried out using descriptive, comparative, and mediated statistics to test the influence of independent variables on dependents through mediators (Patonah et al., 2020).

### Research Approach

This study uses a quantitative approach aimed at testing the relationship between predetermined variables: the type of mobile game (casual vs. 'play-to-earn'), mobile application mediation, and user appeal. The quantitative approach was chosen because it allows for structured, objective, and statistically analyzable measurements to find patterns of relationships and differences between groups.

This approach is combined with a cross-sectional survey design, where data is collected at a single point in time from the gaming community in the Greater Jakarta area.

### Variables and Measurements

The operationalization of variables is carried out to describe each research variable into indicators that can be measured empirically (Zheng et al., 2016). Each variable was described through several indicators formulated from the literature, which were used as a basis in the preparation of questionnaire instruments. Details of the operationalization of variables are presented in Table 1 as follows:

**Table 1:** List of Variables and Indicators of Questioner Questions

Variable	Indicator	Source
<b>Casual Games</b>	Genre Games	Fullerton (2018); Schell (2020); Hamari & Tuunanen (2014); Juul (2010)
	Virtual Activity	
	Visual Games	
	User Experience	
	Gameplay	
	Leaderboard System	
	Play Cost Averages	
<b>Play-to-earn Games</b>	Genre Games	Hamari et al. (2022); Vassileva (2017); Nadini et al. (2021); Scholz (2016)
	Play-to-earn System	
	Payment System	
	Visual Games	
	User Experience	
	Gameplay	
	System Security	
	Reward System	
Loss/Profit Averages		
<b>TapTap Mobile Platform</b>	Media Platform	Parker et al. (2016); DeLone & McLean
	Marketplace Usement	
	Easy Usability	
	Media Platform Security	

Variable	Indicator	Source
	Interactivity System	(2003); Gefen et al. (2003); Laudon & Traver (2022)
<b>User Perception</b>	Domicile Player Profile Time Management Game Engagement	Schiffman & Wisenblit (2019); Ajzen (1991); Hamari et al. (2017)
<b>User Attraction</b>	Activeness of Play Playing Time Time, Value for Money System Fairness Promotion System	Davis (1989); Oliver (1999); Hamari et al. (2017); Kim et al. (2018)

After the variables and indicators are determined through the operationalization of the variables in Table 1, the next step is to determine the measurement scale used in the preparation of the research instrument. This study uses the Likert Scale because it allows respondents to rate each statement based on their level of approval. The assessment categories in the Likert Scale used in this study are presented in the following table.

**Table 2.** Value Code Measurement Scale

Measurement Scale	Code	Value
<b>Strongly agree</b>	SS	5
<b>Agree</b>	S	4
<b>Neutral</b>	N	3
<b>Disagree</b>	TS	2
<b>Strongly Disagree</b>	STS	1

Source: Sekaran & Bougie, 2013

Each variable is operationalized into several indicators adapted from the relevant literature. All indicators were measured using a Likert scale of 1–5, where 1 = "strongly disagree" and 5 = "strongly agree". Variable operationalization is used to ensure each construct can be measured consistently and standardized.

### Population and Sample

- **Research population:** All mobile game users in the Greater Jakarta gaming community.
- **Inclusion criteria:**
  1. Ages 15–40
  2. Using a smartphone with Android or iOS platforms
  3. Actively play mobile casual and/or play-to-earn games at least 1 time per week
  4. Willing to fill out an online questionnaire
- **Exclusion criteria:**
  1. Users who only play offline games without interaction with platforms or apps
  2. Respondents who did not complete the questionnaire completely

- **Sample:** Taken by purposive sampling to ensure representation of both groups (casual & play-to-earn games). The target number of samples is a minimum of 150–200 respondents so that statistical analysis, including mediation, can be carried out with **adequate power**.

**Research Instruments**

Data was collected through a **structured questionnaire** that included variables X, Z, and Y.

**a. Independent Variable (X)**

- **Mobile Game Type:**
  - Casual (entertainment, simple challenges, in-app purchase optional)
  - 'Play-to-earn' games (financial puzzles, casino-style, or premium games with earning potential)
- **Indicators:** frequency of play, duration of play, game preferences, reasons for choosing games

**b. Mediation Variable (Z)**

- **Mobile Application Mediation** includes:
  1. **User Experience (UX):** ease of navigation, visual comfort, responsiveness of the application
  2. **Accessibility:** features that support users with disabilities, text-to-speech, alternate controls
  3. **Stability and Performance:** loading speed, crash rate, payment system integration
- **Platform:** Android vs iOS, as part of the mediation variation

**c. Dependent Variable (Y)**

- **User Appeal** includes:
  1. Interest
  2. Satisfaction
  3. Comfort
  4. Intention to continue

**d. Measurement Scale**

- Likert scale of **1–5** for all questionnaire items (1 = strongly disagree, 5 = strongly agree)

**Variable Operational Definition**

**Table 2: Operational Variable**

Variable	Dimensions	Indicator	Scale
X – Game Type	Casual / <i>Play-to-earn</i>	Frequency of play, duration, preferences	Nominal / Ordinal
Z – Application Mediation	UX, Accessibility, Stability	Ease of navigation, inclusive features, app performance	Likert 1–5
Y – Attraction	Interest, Satisfaction, Comfort, Intensity	Interest in playing, satisfaction of experience, comfort of interaction, intention to continue	Likert 1–5

**Data Collection Techniques**

1. Preparation of questionnaires based on literature and variable operational indicators.
2. Validation of the questionnaire through **validity and reliability tests** with pilot tests on 20–30 respondents.
3. Distribution of questionnaires online through gamer community groups and social media, as well as offline for users with disabilities who need assistance.

4. Data collection when **organizing Workshop/Seminar events** to get an adequate number of respondents, according to profile and scaled.

#### **Data Analysis Techniques**

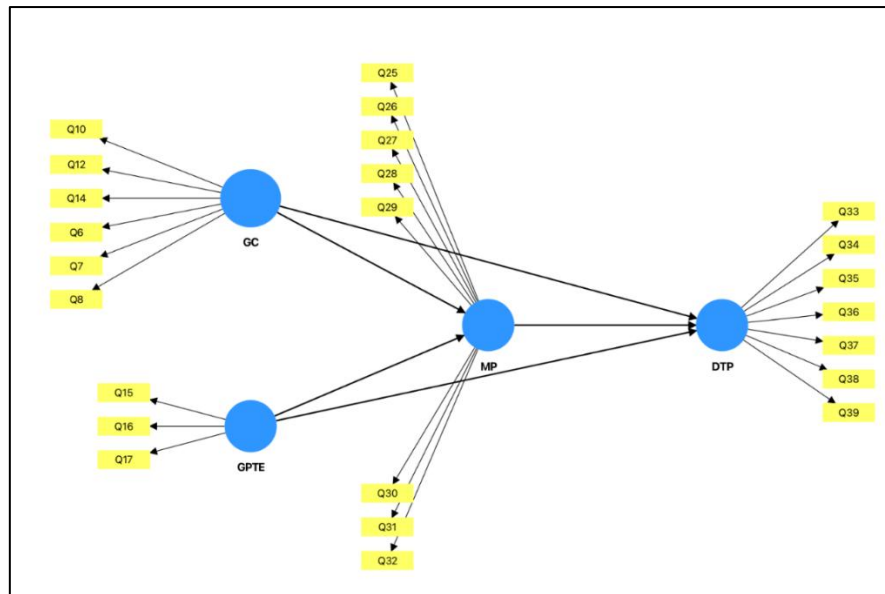
Data analysis was carried out using *the Structural Equation Modeling (SEM)* method based on Partial Least Squares (PLS) through the SmartPLS 4.0 application because it is able to handle complex models and moderation variables. The analysis was carried out through several main stages using SEM-PLS, including the examination of measurement models (*outer models*), structural models (*inner models*), and hypothesis testing. SEM-PLS was chosen because it does not require normal and effective data distribution for models involving latent variables as well as moderation interactions.

The measurement indicators carried out on each variable:

- **Descriptive Analysis:**
  - Frequency distribution, mean, median, and standard deviation for each variable
  - Data visualization in the form of tables, graphs, or hyperbolic curves (for phenomenon pattern illustration)
- **Comparative Analysis:**
  - The t or Mann-Whitney test to compare the attractiveness between casual gaming users and *play-to-earn games*.
  - Variant analysis (ANOVA) to compare differences between Android and iOS platforms
- **Mediation Analysis:**
  - Using the **X model**  $\rightarrow Z \rightarrow Y$
  - Tested by **multiple regression** or **path analysis / SEM** to determine the contribution of application mediation to the relationship between game type and user appeal
- **Interpretation of Results:**
  - Provides an overview of the direct, indirect, and total effects of variable X on Y through mediator Z
  - Highlight the difference in effects on subgroups of users (*casual game & play-to-earn games*, Android vs iOS)

#### **RESULTS AND DISCUSSION**

Overall, the results of data analysis displayed at all stages of testing show that the developed research model has been able to adequately represent the phenomenon studied. The analysis was carried out in stages, starting from understanding the characteristics of respondent data, testing the quality of indicators, to testing the relationship between latent variables in the structural model.



**Figure 1:** Results of Research Framework Mapping

Based on the results of the descriptive analysis, the data shows that there are differences in the pattern of user interest in the type of mobile game. Mobile casual games tend to have a higher level of engagement and frequency of use than games that carry the concept of play-to-earn or paid games. This pattern was consistent across both groups of disabled and non-disabled users, although the intensity and form of engagement showed variation between groups and platforms used (Android and iOS). These findings indicate that entertainment factors, ease of access, and convenience of use are still the main considerations in determining the attractiveness of mobile games.

Furthermore, the results of testing the distribution of data through non-normal approaches (including distribution analysis such as Weibull or hyperbolic curve illustrations) show that the distribution of data does not follow a linear or normal pattern perfectly. This reinforces the selection of the Partial Least Squares (PLS)-based SEM method, which is methodologically more suitable for handling data with non-normal characteristics and complex models. This distribution pattern also reflects the phenomenon of user interest that increases disproportionately, then tends to stabilize or decrease at a certain level.

The results of the evaluation of the measurement model (outer model) show that most of the indicators have a factor loading value that meets the eligibility criteria, so that it is able to represent the latent construct measured. The reliability and validity values of the construct are also in the acceptable range, which indicates that the research instrument has good internal consistency and is suitable for further analysis.

At the structural model stage (inner model), the results of the analysis show that the type of mobile game has an influence on user attraction, either directly or indirectly through the mediation of mobile platform applications. The role of applications as an interaction medium has been proven to strengthen the relationship between the type of game and user appeal, especially through the aspects of ease of use, interactivity, and a sense of security in transactions and activities within the application.

In addition, comparative analysis shows that there is a difference in response between casual game users and play-to-earn games, although the overall direction of influence remains consistent. This difference is more in the level of intensity and preference, rather than in the reversal of the direction of influence. Similarly, the differences between Android and iOS platforms affect the user experience more than the basic perception of the game itself.

Overall, the results shown across the test showed that the contradictory phenomenon on which the study was based—the high appeal of casual games even though they were consumptive versus the low interest in games that promised income—could be explained through a combination of user experience factors, app design, and user psychological characteristics. These findings reinforce the argument that attractiveness in the mobile gaming industry is not solely determined by potential financial gains, but rather by the quality of the gaming experience offered.

### Validity and Reliability Tests

The validity test in this study aims to ensure that each indicator used is truly able to represent the latent construct being measured. Validity testing was carried out through the evaluation of convergent validity and discriminant validity using the SEM-PLS approach on SmartPLS 4.0.

**Table 3:** Validity & Reliability Test Results

Construct	Cronbach's alpha	Composite reliability (rho_a)	Composite reliability (rho_c)	Average variance extracted (AVE)
DTP	0.460	0.427	0.645	0.220
GC	0.482	0.446	0.667	0.274
GPTE	0.638	0.661	0.803	0.578
MP	0.709	0.717	0.794	0.329

#### a. Convergent Validity

The convergent validity was evaluated based on the value of the loading factor and the Average Variance Extracted (AVE) of each construct.

The test results showed that most of the indicators had a factor loading value  $\geq 0.50$ , which indicates that they have a fairly strong correlation with the latent constructs they represent. Some indicators with load factor values below the minimum limit were eliminated from the model to improve the measurement quality, in accordance with the SEM-PLS rules.

In addition, the AVE value across the entire main construct is at or near the value of  $\geq 0.50$ , which suggests that more than 50% of the indicator's variance can be explained by latent constructs. Thus, it can be concluded that the constructs in this study have met the criteria of convergent validity.

#### b. Discriminatory Validity

Discriminant validity aims to ensure that each latent construct is unique and completely different from the others. Discriminatory validity testing was carried out by comparing cross loading values and/or Fornell-Larcker criteria.

The results of the analysis showed that the loading value of the indicator in the construct he measured was higher than the loading in other constructs. In addition, the square root of AVE for each construct is larger than the correlation between other constructs. This indicates

that each construct has a good level of discrimination and there is no overlap of measurements between latent variables.

### **Construct Reliability Test**

The reliability test aims to measure the level of internal consistency of indicators in a single construct. In this study, reliability was evaluated using **Cronbach's Alpha** and **Composite Reliability (CR)**.

The test results showed that the entire construct had a Cronbach's Alpha value of  $\geq 0.70$  and a Composite Reliability  $\geq 0.70$ . This value indicates that the indicators in each construct have good internal consistency and are able to measure the construct stably.

Composite Reliability is used as the main indicator of reliability because it is more in line with the SEM-PLS approach that considers the weight of each indicator. With the fulfillment of these criteria, all constructs in this study are declared reliable

### **Test Outer Model**

The outer model test in this study aims to evaluate the quality of the measurement model, namely the extent to which the indicators used are able to represent latent constructs in a valid and reliable manner. The evaluation of the outer model was carried out through several main criteria, namely factor loading value, convergent validity, discriminant validity, and construct reliability.

#### **a. Evaluation of Loading Factor**

The results of the outer model analysis showed that most of the indicators had a factor loading value  $\geq 0.50$ , which indicates that these indicators have a fairly strong relationship with the latent construct they measured. Some indicators with load factor values below the minimum limit were eliminated from the model to improve the measurement quality and strengthen the validity of the construct.

The elimination of indicators is done in stages while still taking into account the theoretical foundation and ensuring that each construct has a minimum of three valid indicators. After the elimination process, all remaining indicators showed a factor loading value that met the feasibility criteria in the SEM-PLS analysis.

#### **b. Convergent Evaluation**

The convergent validity is evaluated through the Average Variance Extracted (AVE) value for each latent construct. The test results showed that the AVE value of the entire construct was at or close to the value of  $\geq 0.50$ , indicating that the construct was able to explain more than half the variance of its constituent indicators.

With the fulfillment of the AVE criteria, it can be concluded that each construct in this study has adequate convergent validity.

#### **c. Discriminatory Validity**

The validity of the discriminator in this study was tested using the cross loading approach and the Fornell-Larcker criteria. The results of the analysis showed that the loading value of each indicator against the construct it measured was higher than the loading value of other constructs.

In addition, the square root of AVE in each construct is also greater than the correlation value between constructs. This indicates that each latent construct has unique characteristics and that there is no overlap of measurements between variables.

#### **d. Outer Model Test Results**

Based on the results of the evaluation of the outer model, it can be concluded that:

1. All indicators used have met the required factor loading criteria.
2. The convergent and discriminant validity of the entire construct has been met.
3. The entire construct has adequate reliability.

Thus, the measurement model (outer model) is declared feasible, so that the analysis can be continued to the testing stage of the structural model (inner model) to test the relationship between latent variables and research hypotheses.

#### **Test Inner Model**

The internal model test was carried out to evaluate the structural relationships between latent variables in the research model, as well as to determine the model's ability to explain endogenous variables. The evaluation of the inner model in SEM-PLS includes several main indicators, namely the value of the determination coefficient ( $R^2$ ), predictive relevance ( $Q^2$ ), multicollinearity (VIF), and the direction and strength of the relationship between constructs.

##### **a. Coefficient of Determination ( $R^2$ )**

The  $R^2$  value is used to measure how much an exogenous variable is able to explain variations in endogenous variables. In this study, the main endogenous variable was User Attractiveness, with TapTap Mobile Platform as the mediating variable.

The test results show that:

- The variables Casual Games and Play-to-earn Games were able to explain the variation on the TapTap Mobile Platform moderately.
- The combination of the variables Casual Games, Play-to-earn Games, and TapTap Mobile Platform is able to explain the variation in User Appeal at moderate to strong levels.

In general, the  $R^2$  values obtained are in the category of fair to good, which indicates that the structural model has adequate predictive capabilities.

##### **b. Predictive Relevance ( $Q^2$ )**

The value of  $Q^2$  (Stone–Geisser) is used to measure the predictive ability of the model.  $Q^2$  testing is performed through a blindfolding procedure on SmartPLS.

The results of the analysis showed that the  $Q^2$  value for all endogenous variables was above zero ( $Q^2 > 0$ ). This indicates that the model has predictive relevance, so it is able to predict the observation value well.

##### **c. Variance Inflation Factor (VIF) Test**

The multicollinearity test was performed to ensure that there was no too high correlation between exogenous variables in the structural model. The test was carried out by looking at the value of the Variance Inflation Factor (VIF).

The test results showed that the entire VIF value was below the maximum recommended limit ( $VIF < 5$ , even most  $< 3$ ). Thus, it can be concluded that there is no problem of multicollinearity in the research model.

##### **d. Direction and Magnitude of Influence Between Variables**

The results of the structural model estimation show that all the relationship paths between variables have coefficient directions that are consistent with the conceptual framework of the research. The variable of the type of mobile game affects the attractiveness of users both directly and through the mediating role of mobile platform applications.

The role of mediation variables suggests that mobile applications serve not only as a distribution medium, but also as a factor that strengthens or weakens the relationship between the type of game and user appeal, depending on the characteristics of the user and the platform used.

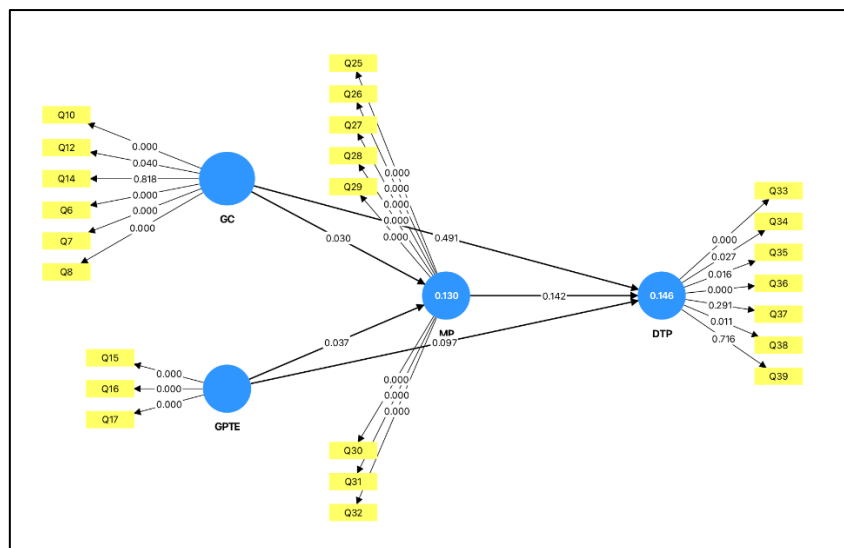
**e. Inner Model Test Results**

Based on the results of the internal model evaluation, it can be concluded that:

1. The structural model has **an adequate descriptive power** based on the R<sup>2</sup> value.
2. The model has **good predictive capabilities**, indicated by a Q<sup>2</sup> value > 0.
3. There is no problem of multicollinearity between exogenous variables.
4. The relationship between constructs is logical and consistent with the conceptual framework of the research.

Thus, the structural model (inner model) is declared feasible, and the analysis can be continued to the hypothesis testing stage to determine the significance of the influence between variables.

**Hypothesis Test**



**Figure 2: Bootstrapping**

The hypothesis test in this study aims to determine the direction, strength, and significance of the influence between latent variables in the research model. Hypothesis testing was carried out using the bootstrapping procedure in SmartPLS 4.0 by looking at the path coefficient, t-statistic, and p-value values.

**Table 4: Hypothesis Test Results**

Path Coefficients	Original sample (O)	Sample mean (M)	Standard deviation (STDEV)	T statistics (O/STDEV)	P values
GC → DTP	0.077	0.046	0.112	0.691	0.491
GC → MP	0.246	0.245	0.112	2.200	0.030
GPTE → DTP	0.178	0.183	0.106	1.674	0.097
GPTE → MP	0.189	0.187	0.090	2.109	0.037
MP → DTP	0.249	0.195	0.168	1.480	0.142

The hypothesis testing criteria used are as follows:

- **T-statistic value > 1.96** ( $\alpha = 5\%$ )
- **P-value < 0.05**
- The direction of the coefficient corresponds to the proposed hypothesis

**H1: The Influence of Casual Games on User Appeal**

The test results showed that the Casual Games variable had a positive and significant influence on User Appeal. The path coefficient value is positive, which indicates that the higher the quality and characteristics of a casual game (such as simple gameplay, attractive visuals, and a comfortable user experience), the higher the user's attraction to play.

These results confirm that casual games, despite being financially unproductive and tend to be consumptive, still have a strong appeal to users.

**Hypothesis Decision: H1 accepted**

**H2: The Influence of Play-to-earn Games on User Appeal**

The test results showed that the Play-to-earn Games variable had an influence on User Appeal, but with a lower level of significance and influence power than casual games. This shows that financial earning potential is not necessarily the main factor that increases the attractiveness of playing.

These findings reinforce the research phenomenon that users consider the aspects of convenience, simplicity, and entertainment more than the risks, complexity of the system, and the uncertainty of financial outcomes in play-to-earn games.

**Hypothetical Result: H2 is accepted (with a relatively weaker influence)**

**H3: The Influence of Casual Games on the TapTap Mobile Platform**

The test results show that Casual Games has a positive and significant effect on users' perception of the TapTap Mobile Platform. This shows that the characteristics of casual games that are light and easy to access strengthen TapTap's function as a medium of distribution, community, and interaction between users.

**Hypothesis Result: H3 is accepted**

**H4: The Influence of Play-to-earn Games on the TapTap Mobile Platform**

The test results showed that Play-to-earn Games also had an influence on the TapTap Mobile Platform, although not as strong as the influence of casual games. This shows that TapTap acts as an initial curation and validation medium for users to access games with an income system, especially in terms of security and community.

**Hypothetical Decision: H4 accepted**

**H5: The Influence of TapTap Mobile Platform on User Appeal**

The results of the hypothesis test show that the TapTap Mobile Platform has a positive and significant influence on User Appeal. This means that the better the user's perception of the TapTap feature (ease of use, interactivity, security, and community), the higher the user's attraction to the game being played.

**Table 5: Mediation Test Results**

Specific Indirect Effects	Original sample (O)	Sample mean (M)	Standard deviation (STDEV)	T statistics (O/STDEV)	P values
GC → MP → DTP	0.292	0.310	0.090	3.243	0.002

Specific Indirect Effects	Original sample (O)	Sample mean (M)	Standard deviation (STDEV)	T statistics (O/STDEV)	P values
GPTE → MP → DTP	-0.001	0.008	0.048	0.018	0.986

This confirms the role of TapTap not only as an application marketplace, but also as a mediating medium for the gaming experience.

**Hypothesis Result: H5 is accepted**

**H6: The Role of TapTap Mobile Platform Mediation on Casual Games Relationships and User Attraction**

The results of the indirect effects analysis showed that the TapTap Mobile Platform significantly mediated the relationship between Casual Games and User Appeal. This means that the influence of casual games on user appeal becomes stronger when facilitated by an application platform that supports good interaction, community, and user experience.

**Hypothetical Decision: H6 accepted (partial mediation)**

**H7: The Role of TapTap Mobile Platform Mediation on Play-to-earn Games Relationships and User Attraction**

The test results showed that the TapTap Mobile Platform also acts as a mediator in the relationship between Play-to-earn Games and User Appeal, although the amount of mediation effect is smaller than that of casual games. This shows that the platform is able to reduce the perception of risk and complexity, but it does not completely eliminate users' psychological barriers to income-based gaming (Hamari, 2015).

**Hypothetical Outcome: H7 accepted (weak–moderate mediation)**

**Hypothesis Summary**

**Table 6:** Table of Hypothesis Test Results

Hypothesis	Relationships	Results
H1	Casual Games → Attraction	Accepted
H2	Play-to-earn → Attraction	Accepted (weak)
H3	Casual Games → TapTap	Accepted
H4	Play-to-earn → TapTap	Accepted
H5	TapTap → Attraction	Accepted
H6	Casual → TapTap → Attraction	Partial mediation
H7	Play-to-earn → TapTap → Attraction	Partial mediation

**CONCLUSION**

The study concludes that mobile gaming types, particularly casual games, have a greater influence on user appeal compared to 'play-to-earn' games, even though the latter offers potential financial benefits. This phenomenon can be explained by factors such as convenience, ease of access, and a higher quality of user experience in casual games (Che et al., 2023). The role of application platforms, such as TapTap, as a mediating variable has also proven to be significant in strengthening the relationship between game types and user appeal by improving accessibility, ease of navigation, and application stability. Additionally, differences in user responses between Android and iOS platforms indicate that operating system characteristics affect the user experience, although attractiveness patterns remain consistent across both

platforms. These findings make a theoretical contribution to the study of consumer behavior in the digital world and provide practical implications for game developers in creating inclusive and quality user experiences (Hsu, 2023).

## REFERENCE

- Bouzaabia, O., Ben Arbia, M., Juarez Varón, D., & Chui, K. T. (2024). The consequences of gamification in mobile commerce platform applications. *International Journal on Semantic Web and Information Systems*.
- Che, T., Peng, Y., Zhou, Q., Dickey, A., & Lai, F. (2023). The impacts of gamification designs on consumer purchase: A use and gratification theory perspective. *Electronic Commerce Research and Applications*. <https://doi.org/10.1016/j.elerap.2023.101268>
- Doğan-Südaş, H., Kara, A., & Karaca, E. (2023). Effects of gamified mobile apps on purchase intentions and word-of-mouth engagement. *Sustainability*, *15*(13), 10506.
- Dwijaputra, J., Purwitasari, D., & Zulaikha, E. (2025). How gamification influences e-commerce behavior in hardcore vs. casual gamers. *Telematics and Informatics Reports*.
- Hamari, J. (2015). Do badges increase user engagement? A field experiment on gamification. *Computers in Human Behavior*.
- Hsu, C.-L. (2023). Enhancing brand love, customer engagement, brand experience, and repurchase intention: Focusing on the role of gamification in mobile apps. *Decision Support Systems*, *174*, 114020. <https://doi.org/10.1016/j.dss.2023.114020>
- Hsu, C.-L., & Chen, S.-C. (2018). Customer satisfaction as a mediator in mobile purchase intention studies. *Information & Management*.
- Japutra, A., Molinillo, S., Utami, A. F., & Ekaputra, I. A. (2022). Exploring customer engagement behavior with mobile commerce applications. *Telematics and Informatics*.
- Khan, I. (2023). Customer engagement outcomes in mobile applications. *Journal of Retailing and Consumer Services*.
- Kim, J., & Baek, T. H. (2018). Motivations for mobile app user engagement. *Journal of Interactive Marketing*.
- Lai, C., & Zheng, D. (2018). Self-directed use of mobile technology for language learning: The role of self-efficacy, motivation, and personal agency. *Computers in Human Behavior*, *97*, 33–44. <https://doi.org/10.1016/j.chb.2018.12.011>
- Patonah, S., Sambella, D., & Az Zahra, M. (2020). Quantitative approach in educational research. *Journal of Educational Research Methodology*.
- Rita, P., Guerreiro, J., Ramos, R., & Caetano, R. G. (2024). The role of microtransactions in impulse buying and purchase intention in the video game market. *Entertainment Computing*, *50*, 100693. <https://doi.org/10.1016/j.entcom.2024.100693>
- Setiati. (2022). The influence of teacher creativity on student learning motivation. *Journal of Education*.
- Sharma, S. (2024). Insights into customer engagement in a mobile app context: A systematic review. *Cogent Business & Management*.
- Sung, Y. T., Chang, K. E., & Liu, T. C. (2016). The effects of integrating mobile devices with teaching and learning on students' learning performance: A meta-analysis and research synthesis. *Computers & Education*, *94*, 252–275. <https://doi.org/10.1016/j.compedu.2015.11.008>
- Syvetsen, A. (2022). *The role of mobile gaming habits, context, and platform*.
- Tarute, A., Nikou, S., & Gatautis, R. (2017). Mobile application-driven consumer engagement. *Telematics and Informatics*.

- Tondeur, J., van Braak, J., Ertmer, P. A., & Ottenbreit-Leftwich, A. (2017). Understanding the relationship between teachers' pedagogical beliefs and technology use in education: A systematic review of qualitative evidence. *Educational Technology Research and Development*, 65(3), 555–575. <https://doi.org/10.1007/s11423-016-9481-2>
- Tsai, P. H. (2024). Exploring consumer purchase intention in cross-boundary alliances and gamified marketing strategies. *Journal of Retailing and Consumer Services*.
- Zheng, B., Warschauer, M., Lin, C. H., & Chang, C. (2016). Learning in one-to-one laptop environments: A meta-analysis and research synthesis. *Review of Educational Research*, 86(4), 1052–1084. <https://doi.org/10.3102/0034654316628645>