



## THE IMPACT OF PERCEIVED VALUES AND PEER INFLUENCES TOWARD IN-APP PURCHASE INTENTION IN MOBILE GAME

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### ABSTRAK

**Kata kunci:** Game Seluler, Pengaruh Teman, Nilai yang Diyakini

**Latar Belakang :** Dalam beberapa dekade terakhir, Internet dan smartphone sering dianggap sebagai kebutuhan dasar bagi kehidupan manusia. Menurut survei yang dilakukan oleh Datareportal.com, pengguna internet meningkat sebesar 3,5 persen pada tahun ini hingga Oktober 2022, mencapai 5,07 miliar saat kita memasuki kuartal terakhir tahun ini. 171 juta pengguna baru selama 12 bulan terakhir telah meningkatkan penetrasi internet global menjadi 63,5%.

**Tujuan :** Bertujuan untuk menyatakan kembali proposisi bahwa game seluler, terutama game sosial, mengharuskan pemain untuk berkomunikasi dengan pemain lain dan berdiskusi tentang game itu sendiri, dan diskusi sering kali condong ke arah cara membelanjakan uang mereka secara efisien untuk pembelian dalam aplikasi.

**Metode :** Dalam penelitian ini akan digunakan metode "Normal P-P Plot" untuk menentukan apakah data tersebut didistribusikan secara normal atau tidak.

**Hasil :** Hasil ini menunjukkan bahwa pengguna game seluler lebih cenderung membeli Pembelian Dalam Aplikasi ketika mereka melihat sesuatu yang mereka butuhkan atau inginkan dalam game, baik untuk tujuan estetika atau praktis. Kemungkinan untuk membeli juga akan ditentukan oleh genre atau jenis permainan.

**Kesimpulan:** Dapat diartikan bahwa tidak ada pengaruh yang signifikan antara Nilai Hedonik terhadap Niat Pembelian Dalam Aplikasi. Ini menunjukkan bahwa meskipun motivasi hedonik memainkan peran besar dalam hal keterlibatan dalam game itu sendiri, itu tidak berarti itu akan memiliki dampak yang cukup besar dalam hal niat Pembelian Dalam Aplikasi.

### ABSTRACT

**Keywords:** Mobile Games, Friends Influence, Believed Values

**Background:** In the past few decades, the Internet and smartphones are often considered as basic necessities for human life. According to a survey conducted by Datareportal.com, Internet users increased by 3.5 percent in the year to October 2022, reaching 5.07 billion as we entered the final quarter of the year. 171 million new users over the past 12 months have taken global internet penetration to 63.5%.

**Purpose:** Aim to restate the proposition that mobile games, especially social games, require players to communicate with other players and have discussions about the game itself, and discussions often lean towards how to efficiently spend their money on in-app purchases.

**Method:** In this study, the "Normal P-P Plot" method will be used to determine

*whether the data is normally distributed or not.*

**Results:** *These results suggest that mobile game users are more likely to buy In-App Purchases when they see something they need or want in a game, whether for aesthetic or practical purposes. Likelihood to buy will also be determined by genre or game type.*

**Conclusion:** *It can be interpreted that there is no significant effect between Hedonic Value on In-App Purchase Intention. This suggests that even if hedonic motivation plays a large role when it comes to engagement in the game itself, that doesn't mean it will have a appreciable impact in terms of In-App Purchase intent.*

## INTRODUCTION

In the past few decades, Internet and smartphone is often considered as basic necessities for human lives. According to a survey conducted by Datareportal.com, Internet users increased by 3.5 percent in the year to October 2022, reaching 5.07 billion as we enter the final quarter of the year. 171 million new users over the past 12 months have taken global internet penetration to 63.5%. Global mobile users have reached 5.48 billion, with smartphones accounting for almost 4 in 5 of the mobile handsets in use today. The world's mobile user base has grown by 170 million since this time last year, with 68.6 percent of all the people on Earth now using some form of mobile phone (KEMP, 2022). As Internet providers and mobile technologies becoming more affordable, there will be more people who are connected to the Internet. It is predicted that more than two-thirds of the world's population will be connected to the internet by the end of 2023. Hence there would be growing demand for mobile applications to support our daily needs for various purposes, including entertainment purposes. And one of the very promising innovations, that is currently growing rapidly in mobile entertainment industry, is mobile gaming.

Mobile games are defined as a form of game that are played on mobile devices (Terlutter & Capella, 2013). Mobile games have some advantages compared to the other game segment (such as console and PC games), which is easy accessibility and convenience to play whenever and wherever the user wish to play. This makes mobile games are able to cater to larger share of the market due to their flexibility, thus making it quickly become popular (Titov, 2022). As a highly popular form of entertainment, mobile game has a very high potential to be profitable. In 2021, a survey from Statista reports that there are 2.7 billion unique user who played mobile games worldwide, and it boasts a massive \$103.5 billion revenue during the same year (Lynkova, 2022). In a recent survey from Statista.com, it has been mentioned that the average annual revenue per user (ARPU) projection in mobile games segment will reach \$87.32 in 2022 ("Mobile Games - Worldwide," 2022). Mobile games segment currently are the most thriving segment of game market, with year-on-year revenue growth reaching 5.1%.



**Fig. 1 Statistics of global games market growth rates from Newzoo**

Indonesia holds the 16th place in the world and is the largest gaming market in Southeast Asia. The market size of mobile games market in Indonesia is valued at \$853 million in the year and is expected to reach \$2,188 billion by the end of the year 2025 (Reogma, 2022). In terms of revenue, Indonesia's mobile game segment are projected to

reach \$630 million in 2022, with an annual growth rate of 7.41%, resulting in a projected revenue of \$900 million by 2027 (Statista.com, 2022). Mobile games segment are developing well in Indonesia, and several Asian mobile game giants (Tencent, Moonton, Hoyoverse, and other companies) are looking to get into Indonesia’s market soon.



**Fig. 2 Projected revenue in Indonesia’s mobile games market from Statista.com**

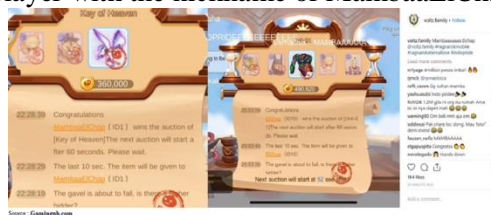
What makes mobile game segment interesting is, there are approximately 37.5% of the mobile game player known as “mobile game payer” – A group of players that spends real money on mobile gaming, and this number are expected to grow in the following years. This shows that mobile game industry is a very interesting segment to look into. Even though most of the mobile game currently available in the app store are free-to-play game, these mobile game payer does pay to have additional features for them that might not be available for the majority of mobile game player that are otherwise not spending money. This kind of business model are also known as “Freemium” business model.

Freemium is a business model in which a product is provided for free with its basic functionality, with additional benefits, features, or services which is charged to user who wish to expand beyond the scope of the given basic functionality (Reime, 2011). In the case of mobile games, the game which implemented this kind of freemium business model is also known as free-to-play, or F2P game to be short. These kinds of mobile games are free to be downloaded and played, however several virtual items that would help the players’ gameplay and progressions are locked behind a paywall, unless the players are willing to pay for those additional features via microtransaction – a business model in which the users can pay with real money for virtual items via in-app purchase (Rahiem & Fitrananda, 2021). By combining freemium and microtransaction business model, mobile game publishers can make virtual goods, in a virtual economic environment, using virtual currency in place of actual money, which also adheres to real life currency exchange rate.

Nowadays, many mobile games utilize the model of in-app purchases where players use real money for virtual goods. This form of “freemium” business model requires the game design to tempt players to do in-game purchases. The in-app purchases itself can be classified into two broad groupings: functional and aesthetic (Hellsten, 2019). Functional in-game purchases like these add something to the gameplay and game enjoyment e.g., more powerful tools or increases flow of the game. On the contrary, games also utilize in-game purchases that are purely for aesthetic purposes e.g., character customization. Aesthetic virtual goods do not add anything to the gameplay itself but are still proven to be very efficient as a monetization tool, that is utilized by many game developers. Both types of virtual goods are popular ways to monetize the game and usually determine the way the game is designed.

Some virtual items are designed to be exclusive and one-of-a-kind, and that makes the price of those virtual items absurdly high. For example, in January 4<sup>th</sup>, 2021, a

South East Asian mobile game called *Ragnarok Online Mobile : Eternal Love*, managed to shock the internet with its virtual auction value. The virtual auction sold Key of Heaven, a one-of-a-kind virtual mount and the only one in the server at that time, which was sold with the price of 360.000 BCC (Rp 900 million). Since then, there are at least several virtual goods that had been sold in the auction with bid value reaching almost Rp 1 billion. But the same game managed to once again amazed the mass in the same year by releasing EVA Unit-01, a giant robot character costume, which was then sold for 490.000 BCC (Rp 1.2 billion). The interesting thing is, two of those virtual items are in the possession of Indonesian player with the nickname of MambaaElChap.



**Fig. 3 Two of the most expensive virtual items in Ragnarok Online Mobile : Eternal Love**

Besides the freemium and microtransaction business models, there is one more layer of business model that is widely implemented in most of mobile games currently available nowadays, which is loot box mechanism, or in Japanese term are referred to as “Gacha”. The term Gacha itself is derived from Japanese word “Gashapon”, a type of capsule toys vending machine which is very popular in Japan. This mechanism is based on random chance, creating a “box” which is a form of a refined lottery system where users choose to pay for a chance to enter a real-time “lucky draw” to acquire these virtual items, contrary to normal transaction in which one player purchases certain virtual goods with a fixed price point (Koeder, Tanaka, & Hitoshi, 2018). The adaptation of gacha mechanism in mobile games creates another complex layer of abstraction, as it allows the game company to use the gacha mechanism as both “reward system” and “honey trap”. Related to the freemium pricing strategy, gacha mechanism can be seen as an extension of the free features given by the F2P game, in a form of reward by giving the players several free chance to try the lucky draw, also in tandem they provide some premium in-game currency that can be bought with real money to further encourage the player to buy additional chance to draw the lucky lots. The gacha behavioral impact of this of this Gacha business model are so significant that there are some controversies about Gacha between mobile game developers, players, and regulators in Japan because its perceived relationship to over-spending behavior (Shibuya, Teramoto, Shoun, & Akiyama, 2019).

There are a lot of different mobile games with gacha systems can be found in the app store. But in the history of mobile games, perhaps the one with most significance in building gacha games history is a Japanese gacha game named *Granblue Fantasy*, which developed by Cygames, Inc., one of the biggest game company in Japan (AlDakhil, Al Taleb, Al Ghamlas, & Al-Megren, 2019). *Granblue Fantasy* is initially designed as a 2D game with turn-based RPG gameplay, and also contains summons and a class system that alters the main character's move-set and growth. Characters in *Granblue Fantasy* gain levels and abilities by accruing experience; by collecting certain materials, some character may earn an extra star (which is called full limit break or "FLB"). Summons and weapons equipped also confer characters with bonuses on attack power and HP. The characters themselves are gained either via quests (the main story quests or special event quests) or by using in-game currency to receive random crystal fragments, which may contain special weapons that add specific characters to the party. Characters, summons, and weapons are ranked (from best to worst) as SSR, SR, R, or N. Since March 2016, *Granblue Fantasy* offers English translation as part of their marketing strategies to expand playerbase outside of Japan.



**Fig. 4 Real footage of Granblue Fantasy game, developed and published by Cygames, Inc.**

For some small, active part of the playerbase, the goal of Granblue Fantasy is to collect and upgrade as much weapon and characters as possible to be able to contend in a guild-vs-guild battle event called “Unite and Fight”, as well as clearing the end game raids available in game. But the majority of the playerbase choose to be more laid back and casual, only collecting characters that roused their interests. It is because one of the main appeal of Granblue Fantasy, is that character designs are very intricate and detailed, also they are voiced by various popular voice actors in Japan. But to be able to obtain these characters, players have to do some gacha pulls and pray that they are lucky enough to draw their desired characters. In Granblue Fantasy, the normal chance of getting an SSR is 3%, and is doubled on special occasions such as Premium Gala, which usually occurs at the end of the month; and Flash Gala, which usually occurs on the middle of the month. Those occasion usually offers limited characters, so as to build pressure on the player to spend money to get them before the time runs out.



**Fig. 5 Examples of Premium Gala and Flash Gala Banner on Granblue Fantasy**

Back in the early days of *Granblue Fantasy*, this limited occasion often leads to overspending incident, moreover so when there are no upper limit on how one can spend before finally getting the characters they want. One of the extreme case of the incident in *Granblue Fantasy* is in March 2016, where the game introduced a character named Anchira, a character based on a Chinese Zodiac. Since 2016 is the year of monkey, Anchira is designed to be a limited “Divine General” series. Being the first character of the limited Divine General series, the players are rushing to get her. The chance of getting her are supposed to be 6% since it is on the rate up occasion. However, one of the player named Taste did a stream to pull Anchira, and spend about \$6.065 (around Rp 90 million) before finally getting her. He did 2.276 pulls, before getting something that was supposed to be have a 6% rate up (Nakamura, 2022). This, of course, resulting in one of the biggest backlash in the history of gacha games, and Cygames as the publisher publicly apologizing by giving a massive refund in the form of their virtual currency for all players who pull for Anchira. This incident, also known as “monkeygate”, remains as one of the most historical moment in the history of gacha games (EXCEL COANANDA, 2021).



**Fig. 6 Anchira, The Divine General, a character that starts the “Monkeygate” incident**

After the “monkeygate” incident, JOGA (Japanese Online Games Association) investigates this matter. After their investigation, it is revealed that the problem lies in the chances of gaining a rare item were not always truly presented to the player (Koeder et al., 2018). This lack of transparency led to a law announced by the Computer Entertainment Supplier’s Association in 2016 in Japan (George-Gabriel & Anastasia, 2022). As part of the law, companies must disclose item probabilities in paid gachas so consumers can understand their chances of winning (CESA, 2016). According to CESA (CESA, 2016), instead of displaying the gacha item offer ratios, game publishers can select and focus on any of the following restrictions :

1. The upper limit of the estimated amount of money to acquire any of the gacha rare items is within 100 times of the charge amount per paid gacha. If the upper limit is exceeded, the estimated price or multiplying factor must be displayed on the gacha page.
2. The price limit to obtain rare gacha items should be within 50,000 yen. If the limit exceeds, the estimated price must be displayed on the gacha page.
3. Display the upper and lower distribution rates of rare gacha items.
4. The offer ratio is displayed for each type of gacha item.

These laws were passed on April 27<sup>th</sup>, 2016, in Japan. Then soon after, other countries like China and South Korea begun to develop their own regulation regarding gacha games. Looking at the implementations of gacha business model above in mobile game industry, we can see issues arise regarding the mobile game player, be it for the free user or the paying one. In the case of typical freemium model implementation, it is expected that a number of players might consider purchasing the additional premium features. But when we include the lucky draw gacha mechanism, there will be a situation where players are more likely failing to get the desired virtual items with resources that are accessible to free players. This will raise a questionable condition in which the paying players still choose to buy additional gacha chance, despite of its low chance of getting higher rarity items.

Before starting this research, a simple survey has been conducted in Nov 14<sup>th</sup>, 2022 until Nov 17<sup>th</sup>, 2022 on a sample of 100 people who plays various mobile games in the past year. This survey consists several simple questions, such as what kind of gacha games they are currently playing, whether they have ever been do in-app purchase on the before, how much money are they putting in their mobile games for these past 12 months, and the factors that leads them to do in-app purchases. In this survey, 93% of the respondent said that they have been doing in-app purchases, while 7% have not. And the statistics for the spending levels are as follows:

5. 30% belongs to F2P/Low spender group, with spendings between Rp 0 – Rp 500.000 a year
6. 24% belongs to Casual spender group, with spendings between Rp 500.001 – Rp 1.000.000 a year
7. 23% belongs to Regular spender group, with spendings between Rp 1.000.001 – Rp 5.000.000 a year
8. 11% belongs to Competitive spender group, with spendings between Rp 5.000.001 – Rp 10.000.000 a year
9. 10% belongs to Hardcore spender group, with spendings between Rp 10.000.001 – Rp 50.000.000 a year
- 10.2% belongs to Whale group, with spendings above Rp 50.000.000 a year.



**Fig. 7 Mobage spending level on the past 1 year, data taken from 100 respondent**

As for the factors influencing the in-app purchase of mobile gacha games, there are several common factors that often mentioned by the respondents of previous survey. The first and the most common reason is that they feel that the in-app purchase is worth the money spent for them, which is mentioned by 69% of the respondent. Second reason is they are attracted by the characters that appears in the draw pool, mentioned by 67% of the respondent. Next reason is that they feel the in-app purchase will help their progress in the game, mentioned by 44% of the respondent. Then, 43% of the respondent said that they want to support the game. 26% of the respondent said that they want to be stronger in terms of competitiveness. Lastly, 13% of the respondent said that they are influenced by their play mates or friends. Beside those common reason, there are several interesting reasons that is mentioned by the respondents. Some respondents said that they bought in-app purchase since they are just missing a bit before getting the guaranteed unit with free obtainable gems. Some other respondents do in-app purchase to further enhance the story experience in the game they played. And lastly, there are respondents that do in-app purchase on impulse since they have the money to spare.

Based on the general definition for the theory of consumption value, it is mentioned that perceived values consisted of several components such as : functional value, social value, emotional value, epistemic value, and conditional value (Boksberger & Melsen, 2011). In the context of mobile games, multiple driving factors influencing players intention to make an in-app purchase, such as loyalty and good value of money. are shown in recent studies (Hsiao & Chen, 2016). Another studies also shows that emotional factors are also driving in-app purchases in mobile games, such as addiction and brand loyalty, which influences each other in the process of influencing players intention to make in-app purchase (Balakrishnan & Griffiths, 2018). The forementioned studies have shown that emotional values, social values, and good value of money are the factors influencing in-app purchase intention (Tirtasamita, 2020), which aligns with the theory of consumption value mentioned before. Mobile game players also might be influenced by their peers such that they found higher satisfaction or intention in purchasing digital items so as to escalate their level of performance (Chow, 2021). In the case that mobile game players have some disposable income, they might do some planned impulse purchase (Shapiro, 2014)

Although the theoretical angles from Behavioral Economics on lottery analysis in mobile game environment has been briefly explained in (Koeder et al., 2018), the lack of comprehensive and empirical explanation on this phenomenon creates a gap of understanding that needs to be addressed. Moreover, the motivation and driving factors behind the mobile game free players and paying players are still unclear and worth discovering. In regards to the previous research, the objective of this research is to address the main factors driving the in-app purchase intention of mobile game players.

## **RESEARCH METHODS**

This research aims to determine the relationship between the independent variable to dependent variable by using quantitative approach. This research uses numerical data to determine the relationship. This research has no specific location as search location, as all of the data used will be gathered via online questionnaire. However, the respondent location will be compiled as well to improve this research integrity. Population is a generalization of area that includes some sort of object or subject that have certain quality or characteristics that can be used to conclude a particular hypothesis (Creswell & Creswell, 2009). The population of this research is all player who plays mobile game that implements gacha mechanism in their game.

Sample is a form of representation of a population that is able to explain the population as a whole (Creswell & Creswell, 2009). This research uses random sampling method due to the sheer size of the population. A population size of mobile game player requires at least 300 sample size for 5% margin of error. As stated in the research background, a simple survey has been conducted to identify the key factor influencing in-app purchase in mobile game with gacha mechanism. There are 100 respondents of the survey, all of them are active players of various mobile games for the past year period. Statistical analysis of their responses reveal that there are four major determinants of in-app purchase intention, which is: the joy in having things they want, the needs to become stronger in-game, worth of the value gained compared to money spent, the need to show off or bragging rights, and attitude from friends who played the same game (Chuang, 2020; Hamari, 2015; Hsiao & Chen, 2016; Tirtasamita, 2020). Based on the result, this research will categorize these determinants into three dimensions of perceived value (hedonic value, utilitarian value, economic value), and one dimension of peer influence (Hsu & Lin, 2016; Sweeney & Soutar, 2001).

## **RESULTS AND DISCUSSION**

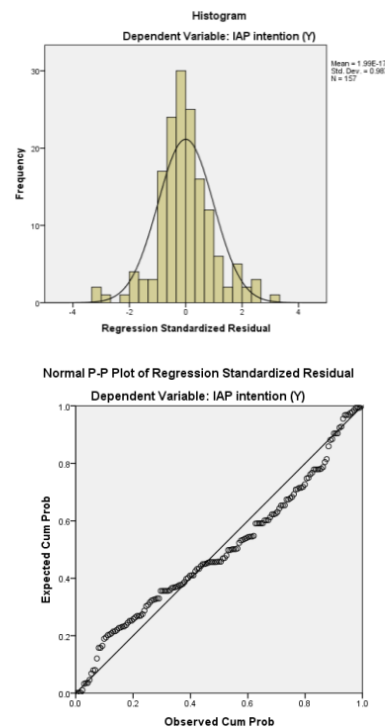
### **A. Result**

#### **1. Classical Assumption Testing**

##### **a. Normality test**

According to normality test is used to test whether the data in a variable is normally distributed or not. If data in a variable is not normally distributed, then the result of statistical analysis will not be accurate. In this research, we will use "Normal P-P Plot" method to determine whether the data is normally distributed or not. The result of the normality tests is as follows:





**Fig. 8 Normality test results**

The above graph explains that the probability plot has normal distribution value since the data spread follows average residual plotline. In the histogram we can also see that the normality curve is right in the middle, so we can conclude that the data is normally distributed.

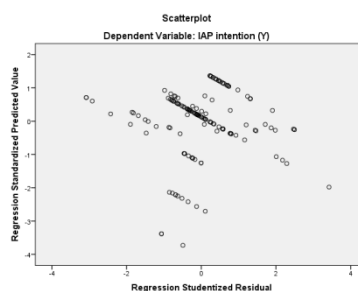
**b. Multicollinearity test**

**Table 1 Multicollinearity test**

Coefficients <sup>a</sup>		
Model	Collinearity Statistics	
	Tolerance	VIF
1 (Constant)		
HEDONIC VALUE(X1)	.448	<b>2.231</b>
Utilitarian Value (X2)	.911	<b>1.098</b>
Economic Value (X3)	.280	<b>3.574</b>
Peer Influence (X4)	.196	<b>5.111</b>

a. Dependent Variable: IAP intention (Y)

Since there are no tolerance value below 0.1 and VIF value above 10, then we can conclude that there are no correlation between the independent variables.



**Fig. 9 Heteroscedasticity**

As we can see, there is no pattern nor equalized data scatter in the residual, also the data spreads over and below the 0 value on Y axis. So, by this result, we can say that the heteroscedasticity assumption is fulfilled.

## 2. Hypotheses Testing

### a. Correlation Test

Correlation test explains the amount of relation from the independent variable (X) to dependent variable (Y). In this correlation test, we will use  $r_{table}$  value = 0.159. The results of correlation test for Hedonic Value (X1), Utilitarian Value (X2), Economic Value (X3), and Peer Influence (X4) toward In-App Purchase Intention (Y) can be found in the table below : Based on significance value shown above, we can conclude that:

- 1) Significance value between Hedonic Value (X1) and IAP intention (Y) is 0.000, which is less than 0.05, which means that the correlation between Hedonic Value (X1) and IAP intention (Y) is significant
- 2) Significance value between Utilitarian Value (X2) and IAP intention (Y) is 0.000, which is less than 0.05, which means that the correlation between Utilitarian Value (X2) and IAP intention (Y) is significant
- 3) Significance value between Economic Value (X3) and IAP intention (Y) is 0.000, which is less than 0.05, which means that the correlation between Economic Value (X3) and IAP intention (Y) is significant
- 4) Significance value between Peer Influence (X4) and IAP intention (Y) is 0.000, which is less than 0.05, which means that the correlation between Peer Influence (X4) and IAP intention (Y) is significant

Then, we will compare  $r_{count}$  value with  $r_{table}$  value. Since our  $N = 157$ ,  $df = N-2 = 157-2 = 155$ , and our significance level is 0.05, then our  $r_{table}$  for  $(0.05;155) = 0.159$ . This means that every item that have  $r_{count}$  above 0.159 will be count as valid. Hence, we can conclude that:

- 1) The  $r_{count}$  value for Hedonic Value (X1) is 0.613. greater than our  $r_{table}$  value (0.159), so we can conclude that there are correlations between Hedonic Value (X1) with In-App Purchase Intention (Y)
- 2) The  $r_{count}$  value for Utilitarian Value (X2) is 0.319. greater than our  $r_{table}$  value (0.159), so we can conclude that there are correlations between Utilitarian Value (X2) with In-App Purchase Intention (Y)
- 3) The  $r_{count}$  value for Economic Value (X3) is 0.815. greater than our  $r_{table}$  value (0.159), so we can conclude that there are correlations between Economic Value (X3) with In-App Purchase Intention (Y)
- 4) The  $r_{count}$  value for Peer Influence (X4) is 0.791. greater than our  $r_{table}$  value (0.159), so we can conclude that there are correlations between Peer Influence (X4) with In-App Purchase Intention (Y)

**b. Multiple Linear Regression Analysis**

The result of multiple linear regression analysis can be seen in the table below :

**Table 2 Multiple Linear Regression Analysis**

		Coefficients <sup>a</sup>				
		Unstandardized Coefficients		Standardized Coefficients		
		B	Std. Error	Beta	t	Sig.
1	(Constant)	<b>1.320</b>	1.889		.699	.486
	HEDONIC VALUE(X1)	<b>.103</b>	.064	.105	1.616	.108
	Utilitarian Value (X2)	<b>.101</b>	.044	.106	2.323	.022
	Economic Value (X3)	<b>.499</b>	.080	.513	6.251	.000
	Peer Influence (X4)	<b>.242</b>	.095	.250	2.547	.012

Based on the above model we can interpret it further as follows:

- 1) The constant is 1.320, means that if every X variable is 0 then Y will have a positive value of 1.320
- 2) The regression coefficient of Hedonic Value ( $X_1$ ) is 0.103; it means that for every unit ( $X_1$ ), it will impact the In-App Purchase Intention (Y) by 0.103. The positive value coefficient means that there is a positive relationship between Hedonic Value ( $X_1$ ) and In-App Purchase Intention (Y)
- 3) The regression coefficient of Utilitarian Value ( $X_2$ ) is 0.101; it means that for every unit ( $X_2$ ), it will impact the In-App Purchase Intention (Y) by 0.101. The positive value coefficient means that there is a positive relationship between Utilitarian Value ( $X_2$ ) and In-App Purchase Intention (Y)
- 4) The regression coefficient of Economic Value ( $X_3$ ) is 0.499; it means that for every unit ( $X_3$ ), it will impact the In-App Purchase Intention (Y) by 0.499. The positive value coefficient means that there is a positive relationship between Economic Value ( $X_3$ ) and In-App Purchase Intention (Y)
- 5) The regression coefficient of Peer Influence ( $X_4$ ) is 0.103; it means that for every unit ( $X_4$ ), it will impact the In-App Purchase Intention (Y) by 0.103. The positive value coefficient means that there is a positive relationship between Peer Influence ( $X_1$ ) and In-App Purchase Intention (Y)

**a. T-test**

**Table 3 T-test**

		Unstandardized Coefficients		Standardized Coefficients		
		B	Std. Error	Beta	t	Sig.
1	(Constant)	1.320	1.889		.699	.486
	HEDONIC VALUE(X1)	.103	.064	.105	<b>1.616</b>	<b>.108</b>

Utilitarian Value (X2)	.101	.044	.106	<b>2.323</b>	<b>.022</b>
Economic Value (X3)	.499	.080	.513	<b>6.251</b>	<b>.000</b>
Peer Influence (X4)	.242	.095	.250	<b>2.547</b>	<b>.012</b>

Based on the t value and significance level above, we can interpret it as follows:

- 1) The t-count value of Hedonic Value (X1) is 1.616. Since the t-count value is lower than t-table (1.976), then it means the null hypothesis is accepted, or the alternative hypotheses is rejected. Which means, Hedonic Value (X1) is not statistically significant to In-App Purchase Intention (Y)
- 2) The t-count value of Utilitarian Value (X2) is 2.323. Since the t-count value is lower than t-table (2.323), then it means the then it means the null hypothesis (H0) is rejected, or the alternative hypotheses (Ha) is accepted. Which means, Utilitarian Value (X1) is statistically significant to In-App Purchase Intention (Y)
- 3) The t-count value of Economic Value (X3) is 6.251. Since the t-count value is lower than t-table (6.251), then it means the null hypothesis (H0) is rejected, or the alternative hypotheses (Ha) is accepted. Which means, Economic Value (X3) is statistically significant to In-App Purchase Intention (Y)
- 4) The t-count value of Peer Influence (X4) is 2.547. Since the t-count value is lower than t-table (2.547), then it means the null hypothesis (H0) is rejected, or the alternative hypotheses (Ha) is accepted. Which means, Hedonic Value (X1) is statistically significant to In-App Purchase Intention (Y)

**b. F-test**

**Table 4 F-test ANOVA<sup>a</sup>**

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	5208.927	4	1302.232	94.736	.000 <sup>b</sup>
	Residual	2089.366	152	13.746		
	Total	7298.293	156			

a. Dependent Variable: IAP intention (Y)

b. Predictors: (Constant), Peer Influence (X4), Utilitarian Value (X2), HEDONIC VALUE(X1), Economic Value (X3)

According to the ANOVA table above, we have F-count value = 94.736, which is higher than our F-table value (2.431). As such, we can conclude that there exists a significant influence on independent variables simultaneously towards the dependent variable

**c. R-square test**

**Table 5 R-square test**

<b>Model Summary<sup>b</sup></b>										
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics					Durbin - Watson
					R Square Change	F	df1	df2	Sig. F Change	
1	.845 <sup>a</sup>	.714	.706	3.708	.714	94.736	4	152	.000	2.168

a. Predictors: (Constant), Peer Influence (X4), Utilitarian Value (X2), HEDONIC VALUE(X1), Economic Value (X3)

**Dependent Variable: IAP intention (Y)**

Based on the above table we can see that the R value is 0.845, it means that all the independent variable is strongly correlated to Y. Also, we can see that the determinant coefficient R square is 0.714, which means that In-App Purchase Intention (Y) is influenced by the independent variable by 71.4%, and the remainder (28.6%) influenced by factors outside the regression model or other variables outside of this research.

## **B. Discussion**

### **1. Impact of Hedonic Value (X1) towards In-App Purchase Intention (Y)**

Based on the statistic results, from the correlation test we found that Pearson Correlation value for Hedonic Value is 0.613, with sig. value of 0.000. Since the Pearson correlation value is higher than R table value of 0.159, and the sig. value is lower than 0.05, it means that there is a positive linear correlation between Hedonic Value (X1) and In-App Purchase Intention (Y).

Even so, high correlation coefficient does not imply causality between the independent variable and the dependent variable. We can see the results of T-test of Hedonic Value, whereas the t-count value of Hedonic Value (X1) is 1.616. Since the t-count value (1.616) is lower than t-table (1.976), and sig. value then it means the null hypothesis ( $H_0$ ) is accepted, or the alternative hypotheses ( $H_a$ ) is rejected. Which means, in terms of relationship, Hedonic Value (X1) is not statistically significant to In-App Purchase Intention (Y). In other words, every increase in Hedonic Value does not necessarily have positive increase in In-App Purchase Intention.

Contrary to the findings in previous researches such as Tirtasmita (Tirtasmita, 2020), which states that there are a positive—albeit not significant—influence from emotional value towards purchase intention, and similarly, research from Tjhin & Hendratno (2021), states that fun, fantasy, and challenge—which is part of hedonic value—has a positive but not significant influence towards purchase intentions, this research does not show any relationship between Hedonic Value (X1) towards In-app Purchase Intention. This research findings is more similar to the results, which states that there are no significant influence from emotional value towards in-app purchase intentions.

### **2. Impact of Utilitarian Value (X2) towards In-App Purchase Intention (Y)**

Based on the statistic results, from the correlation test we found that Pearson Correlation value for Utilitarian Value is 0.319, with sig. value of 0.000. Since the Pearson correlation value is higher than R table value of 0.159, and the sig. value is lower than 0.05, it means that there is a positive linear correlation between Utilitarian Value (X2) and In-App Purchase Intention (Y).

Even so, high correlation coefficient does not imply causality between the independent variable and the dependent variable. We can see the results of T-test of Utilitarian Value, whereas the t-count value of Utilitarian Value (X2) is 2.323. Since the t-count value (2.323) is lower than t-table (1.976), and sig. value then it means the null hypothesis is rejected, or the alternative hypotheses is accepted. Which means, in terms of causality, Utilitarian Value (X2) is statistically significant to In-App Purchase Intention (Y). In other words, every increase in Utilitarian Value will positively impact In-App Purchase Intention. This research finding is similar to Chuang (Chuang, 2020), which states that utilitarian value have positive impact on purchase intention via satisfaction and loyalty.

### **3. Impact of Economic Value (X3) towards In-App Purchase Intention (Y)**

Based on the statistic results, from the correlation test we found that Pearson Correlation value for Economic Value is 0.815, with sig. value of 0.000. Since the Pearson correlation value is higher than R table value of 0.159, and the sig. value is lower than 0.05, it means that there is a positive linear correlation between Economic Value

(X3) and In-App Purchase Intention (Y). Even so, high correlation coefficient does not imply causality between the independent variable and the dependent variable.

We can see the results of T-test of Economic Value, whereas the t-count value of Economic Value (X3) is 6.251. Since the t-count value (6.251) is lower than t-table (1.976), and sig. value then it means the null hypothesis is rejected, or the alternative hypotheses is accepted. Which means, in terms of causality, Economic Value (X3) is statistically significant to In-App Purchase Intention (Y). In other words, every increase in Economic Value will positively impact In-App Purchase Intention. This research finding is similar to Tirtasamita (Tirtasamita, 2020), Chuang (Chuang, 2020), and Hsiao & Chen (Hsiao & Chen, 2016), which states that economic value or good value of money will positively impact purchase intentions.

#### 4. Impact of Peer Influence (X4) towards In-App Purchase Intention (Y)

Based on the statistic results, from the correlation test we found that Pearson Correlation value for Peer Influence is 0.791, with sig. value of 0.000. Since the Pearson correlation value is higher than R table value of 0.159, and the sig. value is lower than 0.05, it means that there is a positive linear correlation Peer Influence (X4) and In-App Purchase Intention (Y).

Even so, high correlation coefficient does not imply causality between the independent variable and the dependent variable. We can see the results of T-test of Peer Influence, whereas the t-count value of Peer Influence (X4) is 2.547. Since the t-count value (2.547) is lower than t-table (1.976), and sig. value then it means the null hypothesis is rejected, or the alternative hypotheses is accepted. Which means, in terms of causality, Peer Influence (X4) is statistically significant to In-App Purchase Intention (Y). In other words, every increase in Peer Influence does not necessarily impact In-App Purchase Intention.

This research finding is similar to Hsieh & Tseng (2018), which states that influence of online and/or offline groups, as well as sense of online and/or offline community have positive impact on purchase intention.

### **CONCLUSION**

Based on the research findings mentioned in previous chapter, several conclusions can be drawn. It can be concluded that there is no significant influence between Hedonic Value over In-App Purchase Intention. This shows that even though hedonic motivations play a big part in terms of the game engagement itself, it does not mean that it would have enough impact in terms of In-App Purchase intention. This research has a different conclusions compared to the previous research findings from Tirtasamita (Tirtasamita, 2020), which states that there are positive relationship between emotional value or hedonic value towards purchase intention, albeit not a significant one.

The reason being even though people would be more willing to spend money if they are happy playing the game, but it does not necessarily imply that people would buy In-App Purchase straight away. There are more to consider when it comes to do In-App Purchase, such as economic situation, personal welfare, and maybe other factors that encourage the In-App Purchase. Based on the findings of this research, where the respondent profile is leaning towards low-to-middle income players, the hedonic factor might not be as prominent as the other factor when it comes to driving up in-app purchase. However, these results might be requiring further study, as the relationship observed in this research can only be attributed to low to middle income players based on this research results. High income players might behave differently and might place hedonic value way higher compared to other player as those kinds of gamers are.

There is a positive and significant influence between Utilitarian Value over In-App Purchase Intention. This result shows that mobile game user would be more inclining to buy In-App Purchase when they see something they need or want in the game, be it for

aesthetical or for practical purposes. The inclination to buy would also be determined by the game genre and/or type. for example, grind-heavy games are more likely to generate transactions by increasing the amount of limited product that focuses on making progression easier. There is a positive and significant influence between Economic Value over In-App Purchase Intention. As mentioned before in the previous part, economic situations and personal welfare are some of few factors determining In-App Purchase intentions. Mobile game users might be more inclined to buy In-App Purchase when they feel what they would get is worth the money they spend. Although, the amount of money they are willing to spend will be widely varied from one mobile game player to another.

There is a positive and significant influence between Peer Influence over In-App Purchase Intention. The existence of game communities and social groups also influence in-app purchase behavior through enjoyable experience of “playing with peers” which enables the members to provide suggestions relating to In-App Purchase. This research reaffirms such proposition that mobile games, especially social games, require players to communicate with other players and discuss about the game itself, and the discussion often leans on how to efficiently spend their money on in-app purchases.

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