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# *THE ART OF THE GACHA LURE: DETERMINANTS OF THE CONTINUOUS USE OF MOBILE ROLE-PLAYING GAMES (RPG) WITH GACHA SYSTEM IN INDONESIA*

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***ABSTRACT***
*The expansion of the mobile games industry should be attributed to the convenience of in-game purchases that are adopted by most mobile games in the market. In this study, we aim to investigate the relationship between determinants of continuous use of mobile RPG games with gacha system in Indonesia. We disseminated a questionnaire that was then filled in by 257 respondents. From a total of 257 results, we excluded 38 questionnaires due to non-completion as well as 8 questionnaires due to the unreliability of questionnaire answers. There were 211 questionnaires remaining for the model analysis. We proposed a total of 13 hypotheses which resulted in flow experience and satisfaction being positively associated with intention of continuous use. The findings of this study highlight how massive the effect of different type of RPG games affect the determinants of players in Indonesia.*
***Keywords :*** *Perceived Value, Flow Experience, Indonesia, Role-Playing Games (RPG).*

## 1. Introduction

The mobile games market is undeniably lucrative even for those who are not even interested in mobile gaming in the first place—according to a study reported by (Wong, 2022), mobile games made up 60% of the entire global gaming industry. Market highlights that were released by (Statista, 2022) also showed just how massive the market is in Indonesia—the mobile games industry in Indonesia is expected to reach US$0.63 billion by the end of the year 2022, with a revenue growth of 16.5% and an annual growth rate (CAGR) of 7.41% spanning from 2022 to 2027. The same source highlighted on the high revenue per user (ARPU) level of mobile game players in Indonesia, reaching US$10.47 per user in 2022, which would most likely increase as we reach 2027 as the market is projected to acquire 76.9 million users in the aforementioned year (Statista, 2022).

The expansion of the mobile games industry should be attributed to the convenient in-game purchase that are adopted by most mobile games in the market. These in-game purchases would make up to 42% of total revenue of App Store and 71% of Google Play's total global revenue by the year 2025 (Knezovic, 2022). It is worth noting that, among the worldwide top grossing mobile games of the year 2021, six of them were games within the RPG (role-playing game) genre with gacha or loot box mechanism; included in the list are Genshin Impact, Honour of Kings, PUBG Mobile, Harry Potter: Magic Awakened, Free Fire, and Fate/Grand Order (Chapple, 2021). In 2022, three of the aforementioned RPGs—Genshin Impact, Free Fire. And PUBG Mobile—are within the top grossing mobile RPGs in Indonesia, along with Moonton's Mobile Legends: Bang Bang, Clash of Clans, Rise of Kingdoms, Girls' Connect, and Arknights (AppBrain, 2022). This shows not only the fact that mobile RPGs with gacha system are frequently played in Indonesia, but also the fact that gacha RPGs are enticing enough for Indonesian gamers to spend their money in. As such, for an RPG with a lucrative gacha system to be able to convert their player base into a base of loyal consumers who execute in-game purchases, it is important to first and foremost understand the reasons behind their player base's intention of continuous use of the game in the first place.

Albeit scarce in numbers, studies have been done on the behaviour of Indonesian gamers on mobile gacha RPGs, but there were discrepancies between the findings. A study conducted by (Syahrivar et al., 2022) shows that there are several factors on in-app purchase intention:

utility, self-indulgence, social interaction, and competition, whose relationship with intention to pay for virtual goods in games is mediated by the intention to play freemium games. While utility is a negative predictor to pay for virtual goods in games, social interaction, competition, and self-indulgence are found to be positive predictors of the intention to pay for virtual goods. On the other hand, in the study conducted by (Rusli & Berlianto, 2022) that employed hedonistic values, utilitarian values, economic values, and emotional values, it was found that there is a positive influence in all the variables aforementioned towards satisfaction and loyalty, but there is no positive influence of satisfaction on the purchase intention of in-app purchases of virtual goods in the mobile RPG Genshin Impact. This discrepancy of results in both studies, despite the fact that they were tested within similar environments, shows that there is the urge to study more of the predictors of intention of continuous use within mobile games, especially on the RPG genre with gacha system as its main revenue stream. In addition to that, the studies have yet to take into account the in-game experience that players would perceive, adding to the urge to study this topic all the more.

What is even more scarce are the studies studying the effects of flow experience that comprises of in-game experience towards Indonesian players' satisfaction and their intention of continuous use gacha games. We found that, while this particular determinant has been studied in other countries and in other type of games that employ the in-app purchase revenue stream, such as the studies (Goli & Vemuri, 2022) and, (Jeonghoon, 2019) they have only been implemented in other parts of Asia and not Indonesia, which has a different demographic makeup and behaviour on its own.

The purpose of this research is to look into the determinants of intention of continuous use of mobile RPGs with gacha system inside it on Indonesian players. Considering that the Generation Z and Millennials are the two generations spending most of their allotted leisure time to game and with 23% and 20% of them, respectively so, fall into the "Bargain Buyers" category who spend their time playing free-to-play games that are high in quality (Knezovic, 2022), the scope of our research includes the participation of Generation Z and Millennials in Indonesia who are playing mobile gacha RPGs and pay for their in-game currencies. Our study will attempt to answer the question we imposed to ourselves: what are the relationships between the determinants of the continuous use mobile gacha RPGs among Generation Z and Millennials in Indonesia?

## 2. Literature Review

### Gacha, in-game purchases, and virtual items

Microtransactions, often known as in-game purchases, are a sort of transaction in video games where players can buy more things, premium content, or virtual items. Even though in-game purchases are quite common in freemium games, where users can access the game for nothing, they are also available in paid-to-play games, where users must pay to play. In-game purchases range in price from $0.99 cents to $100. As more apps are available in the mobile App store, in-game purchases are becoming more and more popular (Firdaus, et al., 2021)

Depending on the game, several in-game purchases are available. For instance, (Lin & Sun, 2007) divide virtual in-game elements into functional props and decorative props. Functional props are things that alter a game character's abilities, whereas decorative props change a character's appearance. (Lee et al., 2018) divided virtual things into probability-based and non-probability-based categories. The value of non-probability-based virtual goods is always the same as the amount of money used to buy them, however the value of probability-based goods, also known as loot boxes or gacha, might occasionally vary and be either smaller or higher than the amount of money spent.

According to (Lehdonvirta, 2009) virtual objects have social, emotional, and utilitarian qualities that include the potential to be customized, rarity, appearance, and source. Mobile game in-game purchases typically include real money being made in the form of virtual currency, which is then used to purchase in-game products. Although there are some situations where gamers can purchase virtual goods directly without using virtual currency as an intermediary (Firdaus et al, 2021).

**Perceived Value**

As decided by the consumer's view of what is received and supplied, perceived value is the consumer's objective assessment of the usefulness of a good or service (Rusli et al, 2022). A product or service's value can be increased by either enhancing its features or lowering the costs associated with purchasing and using it (Boksberger et al., 2011) One of the key concepts for developing consumer thinking has been highlighted in earlier studies as perceived value (Zhang et al., 2018) (Jensen, 1996) This study yielded four categories of perceived value: hedonic value, utilitarian value, economic value, and emotional value (Ray et al., 2012) (Zhang et al., 2018) (Lu & Hsiao, 2010)

(Sheth et al., 1991)'s more developed framework for explaining consumer choice used a multidimensional approach that encompassed both hedonic and utilitarian elements. The conceptual perceived value framework (PERVAL) for the overall consumer perception of the worth of goods and services was further developed by (Sweeney & Soutar, 2001) The framework's division into four categories: emotional, social, quality, and economic that allows for a deeper comprehension of how consumers create their perceptions of value and, as a result, how these perceptions affect consumer behaviour. This study includes 5 elements, which are hedonic, utilitarian, economic, emotional, and social values.

**Flow Theory**

Flow is the overall sensation that people have when they fully engage in an activity (Csikszentmihalyi, 2019) People who are in a flow state entirely lose themselves in their work and barely register any exterior stimuli since nothing else really does seem to matter (Gao et al., 2016) (Hsu & Lu, 2004) In our daily lives, there are instances when we can accidentally fall into one circumstance while fully absorbed in another. Two factors: commitment and flow define this state, which is referred to as flow.

The term commitment, which is primarily employed in the marketing and psychology professions, refers to loyalty that demonstrates how devoted a team member is to their company. In this context, (Csikszentmihalyi, 2019) introduced the idea of flow. The most important component of flow theory is that the flow is natural and comfortable, comparable to the flow of water flows from high to low, with the ideal experience of pulling out its maximum capabilities (Lee, 2019). In video games, flow experience is determined by various in-game experience aspects, such as skilfulness, concentration, reality, fun, as well as preference (Lee, 2019).

**Research Model Framework**

Our research model is applied as such to investigate the determinants of continuous use intention of mobile RPGs with the gacha system in it. We made the assumptions that perceived value directly affect satisfaction while in-game experience directly influences flow experience happening during a gameplay. Two of the variables, flow experience and satisfaction, are then assumed to have direct effect towards intention of continuous use. Due to the lack of studies combining the consumption value theory with flow theory in regard to purchasing decision especially in the Indonesian setting, we are compelled to add the flow theory into our research framework.

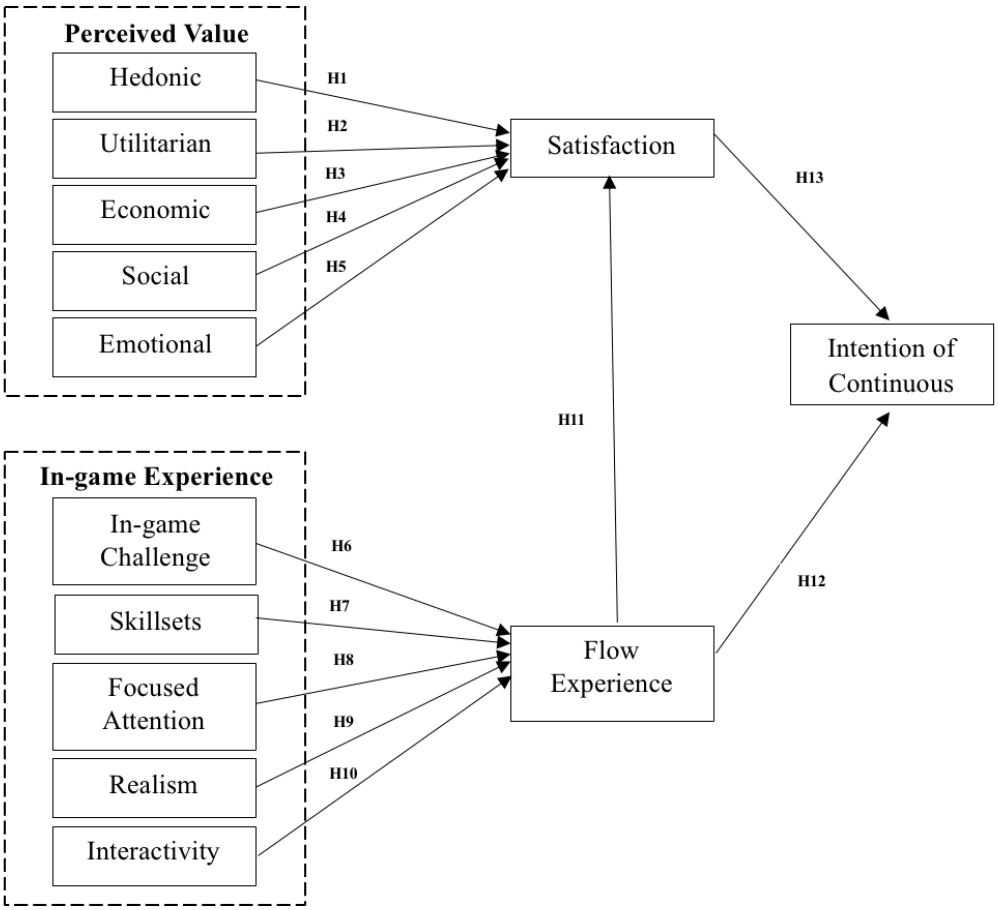


Fig. 1. Proposed Research Model Framework

Hedonic value is the term for the customer's thorough assessment of profit and loss, such as entertainment and escape (Overby & Lee, 2006) According to (Ha et al., 2010) and (Spangenberg et al., 1997) "hedonic perception" describes the distinctiveness, marked significance, and emotional arousal of an item or event. Hedonic values, as opposed to utilitarian values, places more emphasis on experiencing an experience emotionally. A study conducted by (Yang et al., 2009) found that hedonic value significantly impacts satisfaction in players of online games. This implies that, in order to bring satisfaction to the table, game developers would need to understand the ways on how to manage hedonic values pertaining to challenges in the game as well as the opportunities to acquire even more skills in the game with varying mechanisms. Another study published by (Chuang, 2020) also confirmed that the positive relationship between hedonic value as well as satisfaction in mobile game players who are active in massive online forums of Taiwan in China is supported. Therefore, we come up with the hypothesis that:

**H1**: Hedonic Value is positively associated with Satisfaction.

Efficiency, goal orientation, and a focus on a particular activity are all factors that contribute to a product or service's utilitarian component (Ha et al., 2010). An extensive evaluation of functional satisfaction and dissatisfaction is what is known as utilitarian value (Overby et al., 2006). The focus of utilitarian value, which stresses knowledge, is the consumption process. According to the study by (Chuang, 2020), utilitarian value has a positive association with satisfaction, which means that mobile game players assess their satisfaction based on the functional benefits of the game juxtaposed with the sacrifices being made in order to feel the benefits on themselves. This is supported by the study by (Rusli & Berlianto, 2022) which also found that there is a positive relationship between utilitarian value and satisfaction—consumers of mobile games possess the propensity to evaluate a product before making a

purchase with the knowledge that they have, and the more knowledge they have in regards to the purchase they make, the more satisfied they would be. Therefore, our next hypothesis is as follows:
**H2**: Utilitarian Value is positively associated with Satisfaction.

Economic value, according to (Ray et al., 2012) (Verhoef, 2003) and (Sweeney et al., 2001) is the focus on the perceived straightforwardness of the worth of a product or service to the level of quality and complex of the characteristics given. People will pick the original over imitations when they consider a product's economic value (lower price, high quality, and superior benefits) (Ray et al., 2012). Price has historically been thought to play a significant role in consumer value judgments, especially in informal interactions, but as value perspectives and the related multidimensional scale have grown, so too has the importance of economic value (Sweeney et al., 2001). Our prior literature review found that there is a significant relationship between economic value and satisfaction according to the studies by (Rusli et al, 2022), (Lehdonvirta, 2009), and (Chuang, 2020). This indicates that, in order to incite satisfaction among mobile game players, the purchases they are going to make need to have economic value in it—this means that the virtual product being sold by the game has to have a level of quality as well as a complex set of features to be considered as economically valuable. To this end, we proposed the hypothesis as follows:
**H3**: Economic Value is positively associated with Satisfaction.

Social value is the term for when other people persuade you to act in a particular way. Social influence on the virtual environment was described by (Jin et al., 2017) as "the inner sensations of the exchanges with other individuals on the site using virtual items. The "interactions" primarily concern a feature that enables communication with others via virtual objects in a virtual environment. In this sense, social impact describes the emotions experienced when utilizing the features of products made available by the platform. According to a study by (Hsiao et al., 2016), social influence has a favourable impact on player loyalty to mobile games. Depending on the game's design, it's likely that different game kinds will have a range of social impact effects on purchase intention. Social influence may also have a significant impact on a player's choice to purchase a game if multiplayer and player interaction are prioritized in the game. This is also supported by the findings by (Lehdonvirta, 2009) that found that the possession of virtual items, be it for their visual attractiveness or the rarity of the items, in a game would elevate one's social status among others who are playing the same game. With these findings, we propose the following hypothesis:
**H4**: Social Value is positively associated with Satisfaction.

Rational consumers are now beginning to veer toward perceptual consumption in order to satiate their psychological requirements. Similar to this, happy feelings are crucial for people to buy things (Peng et al., 2013). The benefit derived from the degree of emotion or affection experienced when utilizing a good or service is referred to as emotional (Lu et al., 2010) (Sweeney et al., 2001). According to (Dodds et al., 1991) emotional value influences purchase intent in a favourable way. Several research, including (Hsiao & Chen, 2016) found that, based on the knowledge of Emotional Value, it can be determined as the psychological side of consumers whose level of satisfaction is acquired from favourable feelings or affection after analysing the use of items or services. In addition to that, the finding by (Park & Lee, 2011) indicates that emotional, or enjoyment value, is positively related to the satisfaction one feels with the game. This means that satisfaction can be felt once the players are happy with the game they are playing.
**H5**: Emotional Value is positively associated with Satisfaction.

According to the explanation by (Lee, 2019), in-game challenge refers to the possibility of actions encountered by a gamer within the virtual environment context. These challenges, when encountered in the game, would potentially trigger flow to occur when a gamer perceives the challenge to be congruent with the gaming skills they already possess (Liu, 2017) While it is

true that repeated efforts on finishing challenges in the game would increase the gamer's gaming skillset, a challenge that is much easier or much harder when juxtaposed with one's gaming skill would induce boredom and anxiety respectively (Ellis et al., 1994) A balanced challenge would be needed in order to trigger flow. According to (Jackson et al., 2004), the challenge of task or in-game challenge is a factor that enables flow experience. Challenges had a positive influence on flow experience, study conducted by (Liu, 2017). Therefore, In-game challenge is positively associated with Flow Experience.
**H6**: In-game challenge is positively associated with Flow Experience.

Gaming skillsets refer to the capacity of gamers to engage in the actions provided by the games they play (Liu, 2017). The higher the level of a player in a game, the higher their gaming skill would be, as the levels would be most likely matched with the skills that a gamer possesses (Fu et al., 2009) In order to flow to happen, not only should there be challenges in the game, but there should also be challenges that are adequately matching to the skills of the gamers. Striving for the right balance between skillset and the challenges given to players would be one of the many challenges to be tackled by game developers to attract more players to their game. Gaming skillsets which contain the level of the skills in game is one of the factors that enable the flow experience (Jackson et al., 2004). Skills had a positive influence on flow experience according to the study conducted by (Liu, 2017). Therefore, Gaming skillsets is positively associated with Flow Experience.
**H7**: Gaming skillsets is positively associated with Flow Experience.

Concentration, or focused attention, pertains to a situation in which a gamer would be immersed in the game that they do not regard their surroundings due to their undivided attention given to the game they are playing. Concentration is also defined as a state of of complete absorption with the situation of the activity. According to (Lee, 2019), concentration also means that a gamer would not notice the flow of time either. A high concentration would lead to a higher flow experience (Lee, 2019). Another study conducting by (Jackson et al., 2004) shows that high concentration as one of the factors that enable flow experience. Therefore, Concentration is positively associated with Flow Experience.
**H8**: Focused Attention is positively associated with Flow Experience.

Realism pertains to the experience of being inside a virtual environment without actually being there (Heater, 1992) Often found in virtual reality games, realism measures how far or how close a game is to the reality that surrounds the gamer in real life that they would feel as if they have always been the virtual world in the first place. It was found that a high realism level is positively associated with flow experience (Lee, 2019). A study conducted by (Chen & Lin, 2022) shows that realism positively impact toward flow experience during a product evaluation task of augmented reality (AR). Therefore, Realism is positively associated with Flow Experience.
**H9**: Realism is positively associated with Flow Experience.

Interactivity is defined as the experience made by the interaction of the players with any elements in the game. Since interactivity is a defining feature of video games, it frequently appears in the literature about them. The process of technical elements that enable interactions in which knowledge and actions are passed from one participant to another is referred to as interactivity. Interactivity creates engagement, and when it is within a game that one enjoys, interactivity possesses a positive effect on flow experience (Catalán et al., 2019) This includes, but not limited to, being able to engage socially with others inside the same game. (Novak et al., 2000) in their study found that interactivity is one of the most important determinants of flow. Therefore, Interactivity is positively associated with Flow Experience.
**H10**: Interactivity is positively associated with Flow Experience.

A sensation of contentment or pleasure is referred to as satisfaction. Because of the pleasure being induced, consumers are satisfied and have a positive experience using the goods.

In other words, consumer satisfaction is the belief that their consumption has brought them enjoyment as contrasted to dissatisfaction(Ameer, 2014) Game satisfaction is the term used to describe how much customers appreciate their overall mobile gaming experience. In this context, "game satisfaction" refers to how much players enjoyed their overall gaming experience on a mobile device (Firdaus et al., 2021). Consumers' reactions to their requirements being met are referred to as their level of satisfaction. It can also be characterised as an evaluation of the characteristics of a good or service that give customers a level of enjoyment associated with satisfying their consumption demands. In addition to that, according to (Chen, 2008), satisfaction is a general reaction to a comparison of sentiments between anticipated feelings and actual sensations experienced after intake.

The study by (Kim & Ko, 2019) showed that flow experience positively enhances user satisfaction in virtual reality games. Therefore, we hypothesised the same thing would happen in an immersive RPG that requires the players to fully experience the game environment as well.
**H11**: Flow experience is positively associated with satisfaction.

Intention of continuous use refers to the way people continuance of using. It is debatable whether users will continue to use a service if they already find it to be satisfactory and it is free to use (Hamari et al., 2020). However, as long as the flow experience and satisfaction are seen as essential, people will be likely to keep spending money on it. Therefore, we expect there to be a positive association between the flow experience and satisfaction with intention of continuous use.
**H12**: Flow experience is positively associated with intention of continuous use.
**H13**: Satisfaction is positively associated with intention of continuous use.

## 3. Research Methods

### Sample Participants and Procedures

Questionnaires were used in this study to gather information from different primary sources. The questionnaire was distributed through social media to people of Generation Z and Millennials who have played mobile games with gacha system and have purchased the in-game currency with real money to use the gacha system. Samples were taken with the convenience sampling method with a minimum of 200 samples.

### Measurement

The questionnaire that is used in this study has been translated from English to Indonesian, and the results were then re-translated to English. The questionnaire consisted of 38 items. Three items for each of the perceived value—hedonic value, utilitarian value, economic value, social value, and emotional value—were adapted from (Rusli et al, 2022) and (Syahrivar et al., 2022). Items for in-game challenges (3 items), gaming skillsets (3 items), focused attention (2), realism (2), and interactivity (3) were adapted from (Catalan et al., 2019) and (Lee, 2019). Items on Satisfaction (2), Flow Experience (3), and Intention of Continuous Use (2) were adapted from studies by (Rusli et al, 2022), (Catalan et al., 2019), and (Lee, 2019) respectively. The questionnaires are coupled with the Likert scale of 1 to 5 which asked respondents to indicate how much they agree or disagree with a collection of propositions (Joshi et al., 2015) with 1 being strongly disagree and 5 being strongly agree and were applied to all variables.

### Methodology

Partial Least Squares Structural Equation Modelling (PLS-SEM) will be utilized to analyse the data used in this study and test the research model. Smart PLS is the tool used to analyse data. This tool is being used because the study used a small number of samples and is more predictive and explains latent factors than it tests a theory. Component-based PLS (PLS-SEM) estimation's main benefit is that it is non-parametric and does not impose any limitations on the data distributions (Hair et al., 2019). Second, PLS-SEM is seen to be a better approach for research that focus on predictions especially in present study. To get valid and reliable assessments, feasibility tests like validity and reliability tests were used as the key benchmark in this quantitative study's outcomes.

## 4. Results and Discussions

### Demographic

The questionnaire was then filled by 257 people who volunteered to fill in. Incentives of Rp25,000 (approximately 1.6 USD) were distributed to three random participants. From a total of 257 results, we excluded 38 questionnaires due to non-completion as well as 8 questionnaires due to the unreliability of questionnaire answers. There were 211 questionnaires remaining for the model analysis.

The demographic frequency of the questionnaire is as follows:

Table 1 – Demographic makeup of research participants.

| Item | Frequency | % |
|---|---|---|
| Gender | | |
| Male | 126 | 59.7 |
| Female | 85 | 40.3 |
| Age | | |
| 15-25 years old (Generation Z) | 166 | 78.7 |
| 26-40 years old (Millennials | 45 | 21.3 |
| Domicile | | |
| Greater Jakarta Area | 89 | 42.2 |
| Java (Non-Greater Jakarta) | 72 | 34.1 |
| Sumatra | 23 | 10.9 |
| Kalimantan | 17 | 8.1 |
| Sulawesi | 4 | 1.8 |
| Bali & Nusa Tenggara | 3 | 1.4 |
| Maluku & Papua | 3 | 1.4 |
| Latest Education Level | | |
| Elementary School | 3 | 1.4 |
| Middle School | 16 | 7.6 |
| High School | 120 | 56.9 |
| Diploma | 15 | 7.1 |
| Bachelor's | 48 | 22.7 |
| Profession Program | 2 | 9 |
| Master's | 3 | 1.4 |
| Doctorate | 4 | 1.8 |
| Budget (% of income used to spend in games) | | |
| < 10% | 134 | 63.5 |
| 10-25% | 59 | 27.9 |
| 25-50% | 14 | 6.6 |
| > 50% | 4 | 1.9 |

### Result

After making sure that the participants of this research played gacha games and have purchased in-game currencies to roll for the gacha, we compiled the following list to determine the most frequently played mobile RPG with gacha mechanism within our respondents. We found that most (76.7%) of the participants of this research played Mobile Legends: Bang Bang, followed by PUBG Mobile (45.7%) and Clash of Clans (34.7%).

Table 2 – Games played by participants.

| Item | Frequency | % of participants |
|---|---|---|
| Games Played | | |
| Mobile Legends: Bang Bang | 168 | 76.7 |
| PUBG Mobile | 100 | 45.7 |
| Clash of Clans | 76 | 34.7 |
| Free Fire | 67 | 30.6 |
| Genshin Impact | 62 | 28.3 |
| Rise of Kingdoms | 8 | 3.7 |
| Fate Grand Order | 6 | 2.7 |
| Honkai Impact 3rd | 12 | 5.5 |
| Tower of Fantasy | 11 | 5.0 |
| Blue Archive | 1 | 0.5 |
| Arknights | 4 | 1.8 |
| Azur Lane | 1 | 0.5 |
| Others | 15 | 6.8 |

**Construct reliability and validity**

In the table below, the factor loadings are larger than 0.6 and the values of construct reliability are greater than 0.6 as well. This indicates that the validity and reliability of the items below are adequate. Three items—one from Focused Attention (FA3), one from Realism (RE2), and one from Flow Experience (FE3) were omitted from the calculations due to low factor loadings.

Table 3 – Factor loadings, construct reliability, and average variance extracted (AVE).

| Factor | Item | Factor Loading | CR | AVE |
|---|---|---|---|---|
| Hedonic Value | HV1 | 0.882 | 0.896 | 0.742 |
| | HV2 | 0.847 | | |
| | HV3 | 0.856 | | |
| Utilitarian Value | UV1 | 0.859 | 0.869 | 0.690 |
| | UV2 | 0.848 | | |
| | UV3 | 0.783 | | |
| Economic Value | EV1 | 0.863 | 0.889 | 0.728 |
| | EV2 | 0.828 | | |
| | EV3 | 0.868 | | |
| Social Value | SV1 | 0.884 | 0.898 | 0.745 |
| | SV2 | 0.889 | | |
| | SV3 | 0.856 | | |
| Emotional Value | EM1 | 0.823 | 0.854 | 0.662 |
| | EM2 | 0.859 | | |
| | EM3 | 0.755 | | |
| In-game challenge | CH1 | 0.884 | 0.929 | 0.814 |
| | CH2 | 0.913 | | |
| | CH3 | 0.909 | | |
| Gaming Skillsets | SK1 | 0.891 | 0.920 | 0.793 |
| | SK2 | 0.896 | | |
| | SK3 | 0.885 | | |
| Focused Attention | FA1 | 0.929 | 0.935 | 0.877 |
| | FA2 | 0.945 | | |
| Interactivity | IT1 | 0.767 | 0.853 | 0.660 |
| | IT2 | 0.818 | | |
| | IT3 | 0.850 | | |
| Realism | RE1 | 0.815 | 0.839 | 0.723 |
| | RE3 | 0.884 | | |
| Satisfaction | ST1 | 0.884 | 0.891 | 0.803 |
| | ST2 | 0.908 | | |
| Flow Experience | FE1 | 0.805 | 0.872 | 0.774 |
| | FE2 | 0.850 | | |
| | FE3 | 0.783 | | |
| Intention of Continuous Use | CU1 | 0.876 | 0.866 | 0.763 |
| | CU2 | 0.871 | | |

In addition to that, discriminant validity is present when the square root of AVE (Average Variance Extractor) for all constructs are higher than the correlation with any other construct. The square roots of AVE for the constructs shown below are greater than their correlation with other constructs. This indicates that the discriminant validity of the items is validated.

Table 4 – Discriminant reliability.

| | CH | CU | EM | EV | FA | FE | HV | IT | RE | SK | ST | SV | UV |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| CH | 0.902 | | | | | | | | | | | | |
| CU | 0.533 | 0.873 | | | | | | | | | | | |
| EM | 0.636 | 0.528 | 0.813 | | | | | | | | | | |
| EV | 0.496 | 0.590 | 0.533 | 0.853 | | | | | | | | | |
| FA | 0.179 | 0.244 | 0.163 | 0.245 | 0.937 | | | | | | | | |
| FE | 0.579 | 0.555 | 0.527 | 0.438 | 0.416 | 0.880 | | | | | | | |
| HV | 0.517 | 0.549 | 0.641 | 0.661 | 0.153 | 0.445 | 0.862 | | | | | | |
| IT | 0.528 | 0.762 | 0.498 | 0.623 | 0.344 | 0.511 | 0.487 | 0.812 | | | | | |
| RE | 0.421 | 0.432 | 0.412 | 0.330 | 0.594 | 0.512 | 0.316 | 0.536 | 0.850 | | | | |
| SK | 0.637 | 0.565 | 0.658 | 0.411 | 0.178 | 0.505 | 0.549 | 0.526 | 0.389 | 0.891 | | | |
| ST | 0.584 | 0.650 | 0.681 | 0.576 | 0.148 | 0.561 | 0.561 | 0.642 | 0.410 | 0.693 | 0.896 | | |
| SV | 0.481 | 0.510 | 0.611 | 0.633 | 0.194 | 0.509 | 0.701 | 0.503 | 0.378 | 0.522 | 0.587 | 0.863 | |
| UV | 0.516 | 0.537 | 0.609 | 0.675 | 0.177 | 0.488 | 0.731 | 0.571 | 0.324 | 0.534 | 0.570 | 0.731 | 0.830 |

**Model assessment and hypothesis testing**

The research model accounts to 48.0% variation of Flow Experience, 56.9% variation of Satisfaction, and 47.5% of Intention of Continuous Use. This indicates that 52% of Flow Experience variations, 43.1% of Satisfaction variations, and 52.5% variations of Intention of Continuous Use can be explained by other variables not yet included in this research. Following the guidelines by (Hair, et al., 2019), we also found that the R-Squares of Flow Experience and Intention of Continuous Use are weak while the R-Square of Satisfaction can be considered to be moderate.

Table 5 – Results of R-Square.

| Variable | R-Square |
|---|---|
| Flow Experience | 0.480 |
| Satisfaction | 0.569 |
| Intention of Continuous Use | 0.475 |

With the usage of 95% confidence level in this study, we determined that a hypothesis is significant when its p-value does not exceed 0.05. That being said, seven out of 13 hypotheses that we tested were supported, while the rest 6 were not. The usage of F-Square in our result also shows the effect size for each of the hypothesis available, with H13 (Satisfaction → Intention of Continuous Use) possessing the highest F-Square value out of all the hypotheses employed in this study (0.320).

Table 6 – Hypothesis Testing Results.

| Hypothesis | Path | Standardised Coefficient | p-value | F Square | Result |
|---|---|---|---|---|---|
| H1 | HV → ST | 0.001 | 0.995 | 0.000 | Not Supported |
| H2 | UV → ST | 0.025 | 0.782 | 0.000 | Not Supported |
| H3 | EV → ST | 0.198 | 0.010 | 0.042 | Supported |
| H4 | SV → ST | 0.099 | 0.278 | 0.008 | Not Supported |
| H5 | EM → ST | 0.391 | 0.000 | 0.172 | Supported |
| H6 | CH → FE | 0.336 | 0.000 | 0.115 | Supported |
| H7 | SK → FE | 0.142 | 0.121 | 0.021 | Not Supported |
| H8 | FA → FE | 0.218 | 0.004 | 0.058 | Supported |
| H9 | RE → FE | 0.121 | 0.213 | 0.014 | Not Supported |
| H10 | IT → FE | 0.119 | 0.140 | 0.015 | Not Supported |
| H11 | FE → ST | 0.206 | 0.004 | 0.064 | Supported |
| H12 | FE → CU | 0.277 | 0.001 | 0.100 | Supported |
| H13 | ST → CU | 0.495 | 0.000 | 0.320 | Supported |

**Discussions**

This study focuses on the role of satisfaction that is predicted by perceived value and flow experience that is predicted by in-game experience towards intention of continuous usage in mobile ¬RPG with gacha system in it, with Generation Z and Millennials gamers being the subject of this study. This study was made upon the fact that there has been a limited number of studies done to investigate mobile RPG with gacha system in particular, but also especially in the Indonesian setting. The results of our study indicate that both satisfaction towards mobile RPG with gacha system in it as well as the flow experience that the players would have whenever they play the game contribute o the heightened intention of continuous use of the gacha system in itself.

Upon analysing the results of our study, we found that, in order to create the kind of satisfaction that would influence intention of continuous use of the gacha system inside of a mobile role-playing game at large, economic value and emotional value need to be considered as two of the main positive influences. Economic value as well as emotional value as a driver of satisfaction in the mobile gacha RPG is supported by the study conducted by (Rusli et al, 2022), showing that a combination of items that has the same intrinsic value for money, reasonable prices, and an emotional attachment towards the games and the characters that are inside of it would drive the satisfaction of mobile gacha RPG players at large.

It is worth noting that, while most studies cited the importance of catering to utilitarian and hedonic values of the player base in order to create satisfaction among them, this research shows otherwise. It may be true for select games, but for mobile gacha role-playing games at

large that are available to our disposal, hedonic and utilitarian values have no significant effects on satisfaction. In addition to that, social values—the notion of sharing collections with others to leverage a player's social status as well as the notion of connecting with new friend networks through such games—also do not have significant effects on satisfaction. This shows that values that are inherently hedonic (happiness while playing the game, aesthetics of the game itself), utilitarian (learning curve of the game, easy progresses), and social do not influence satisfaction as much as emotional connection with the game and the reasonable prices of in-game currencies the game provides.

On the other hand, in-game challenges that are available within the mobile gacha role-playing game significantly affect flow experience induced while playing such a game. In-game challenges provide an opportunity for players to test their in-game skills—whether it is with the game environment itself or with others playing the same game—as well as to participate in limited-time events that are engaging and exciting to be followed through. Coincidentally, in this research in particular, the three most frequently played mobile RPG with gacha system are Mobile Legends: Bang Bang, PUBG Mobile, and Clash of Clans, all of which provide the opportunity for in-game challenges that require a player's skillset on the game, the tactics that follow each tournament, and the opportunity to test those skills that the players have honed throughout the time they spend playing the game with other players through matchups.

In addition to in-game challenges, focused attention also significantly affects the flow experience that players would feel while playing a mobile gacha RPG game. With this in mind, we can infer that when one becomes focused to the game to the point where they would forget their surroundings, this will increase their flow experience significantly especially in role-playing games that are considered to be multiplayer. This type of role-playing games, oftentimes dubbed as MMORPG, are dependent on the players being present in real-time to play with others from all sides of the world.

The results of this study shed important light on the distinctive dynamics of player happiness and flow experience in mobile role-playing games using gacha systems, especially for Indonesia's Millennials and Generation Z. The study clearly shows that, in contrast to conventional wisdom which emphasises the significance of hedonic, utilitarian, and social values, emotional value and economic value are the main drivers of enjoyment in mobile role-playing games with gacha systems.

The noteworthy impact of affective and financial values on player contentment may be explained by a change in the preferences of mobile gamers. The focus on emotional attachment and the perceived equity of in-game purchases is consistent with the conclusions drawn by (Rusli et al., 2022), who maintained that fair pricing and things' inherent value are critical factors that influence customer happiness. By concentrating on the Indonesian setting, where emotional involvement with game characters and content appears to trump other types of value, our study directly supports and expands upon their conclusions.

Fascinatingly, the results of research such as (Overby & Lee, 2006) and (Ha et al., 2010), which proposed that hedonic and utilitarian values are essential to user pleasure with digital products, are contradicted by this study. There may be a difference between Indonesian gamers' gaming habits and those of players in other areas, as evidenced by the study's absence of significant influence from hedonic and utilitarian values. This might be explained by cultural differences, as gaming experiences in Indonesia are more significantly shaped by emotional resonance and economic rationale.

The study also shows that, in the context of mobile role-playing games with gacha systems, social value—which includes the desire to share collections and form new networks—does not significantly affect enjoyment. This result deviates with the findings of (Lehdonvirta, 2009) and (Jin et al., 2017), who found that social impact was a significant component in gaming happiness. According to the critical comparison, social ties are important in many gaming contexts, but they might not be as important for Indonesian players of gacha-based role-playing games. This may indicate that gamers in this group have a more individualised approach to gaming, prioritising emotional connection and self-actualization over social approval.

Consistent with the findings of (Jackson et al., 2004) and (Liu, 2017), in-game obstacles and focused attention were found to greatly boost flow experience, in contrast to the varying

impact of value aspects on pleasure. This supports the notion that challenging yet skill-balancing game design components, together with those requiring a high level of concentration, are essential for producing immersive gaming experiences. The idea that flow experience is a universal element of game satisfaction that transcends cultural boundaries—even though the exact causes of satisfaction may differ—is strengthened by this critical comparison. This analysis reinforces the importance of challenging and skill-balancing game design elements, along with components demanding focused attention, in enhancing the flow experience that is aligned with the research of Jackson et al. (2004) and Liu (2017). This also underscores the significance of these factors in creating immersive gaming experiences. In addition, this study also suggests that flow experience serves as a universal determinant of game satisfaction, transcending cultural differences, even as the specific factors contributing to satisfaction may vary across contexts.

## 5. Conclusion

This research focuses on deepening understanding into the determinants of intention of continuous use of mobile RPGs with gacha system inside it on Indonesian players. To answer the research objectives, the research model is applied. The results of the study shows that not all the hypothesis are supported. This research offers a variety of variables intended for mobile game RPGs providers and companies that are doing business in Indonesia to be able to advise and find the right strategies for Gen Z and Millennials continuous use.

The respondents in this study only represent Generation Z and Millennials. Therefore, by selecting a more diverse generation of respondents, future study can draw a parallel or create more comparison. This study is only focused on Indonesian. As only Indonesian people are allowed to the poll, future study could choose a sample from a wider variety of nationalities in order to express a more exploratory viewpoint. As a result of the cross-sectional methodology used in this study, the association between the components cannot be proven to be causal over the long run. The longitudinal study method can therefore be used in future research.

This study also shows that there is an abundance of Mobile Legends: Bang Bang players among the roster of mobile gacha games available in our disposal. In addition, the two other most played games within our respondents were PUBG Mobile and Clash of Clans, which are considered Massive Multiplayer Online Role-Playing Games (MMORPG) that focuses not on the environmental immersion but the gameplay that engage the players through in-game challenges and real-time gaming system which requires the players to match and play in real-time without a pause. Thus, this research may not be able to reflect, in full, as to the relationship of the variables in mobile gacha RPGs that are considered as open world such as Genshin Impact and other games that tailors gacha into their mechanism to advance through the game such as Honkai Impact 3rd, Blue Archive, and Arknights.

The elements impacting Indonesian players of mobile role-playing games with gacha systems' inclination to continue using them have been significantly illuminated by this research. The study finds that persistent involvement with these kinds of games is greatly influenced by satisfaction, which is primarily driven by economic and emotional value. When players believe that in-game purchases are both emotionally and financially satisfying, they are more inclined to stick with the gacha system. Furthermore, the flow experience increases player immersion and motivates them to keep playing, especially when it is fuelled by in-game challenges and concentrated attention.

The study also shows that social, hedonistic, and utilitarian values have less of an effect on player pleasure in this situation, indicating that these factors might not be as important to consider when designing mobile role-playing games with gacha systems. These results highlight the significance of striking a balance between in-game difficulties and chances for concentrated attention that maximise player engagement, and components of game design that improve economic and emotional value. Subsequent investigations may examine these relationships within a more comprehensive framework, encompassing many player generations and a wider variety of mobile role-playing games with distinct gameplay elements.

The research's conclusions have a number of useful ramifications for those creating and promoting mobile role-playing games with gacha systems that cater to Indonesian players,

especially those in Generation Z and Millennials. Given the significant impact that both economic and emotional value have on player satisfaction, it is recommended that game creators give top priority to designing in-game purchases that both provide a clear, observable value for the money and strengthen emotional bonds with players. This can entail providing reasonably priced, significant virtual goods that improve the gaming experience and emotionally connect with the player base.

Furthermore, given the substantial influence in-game challenges have on the flow experience, it is imperative that game designers carefully balance the challenges' degree of difficulty and engagement. Developers are able to sustain high levels of engagement and improve player immersion by offering challenges that are both engaging and balanced. This also implies that maintaining player interest and encouraging consistent gacha system use would depend greatly on the inclusion of characteristics that enable players to focus intently on the game, such as immersive surroundings and real-time gameplay mechanisms.

It is advised that, in light of these results, future generations of mobile role-playing games with gacha systems stick to their core objective of providing players with tough gameplay that keeps them interested, while also continuing to improve their emotional engagement and economic value offerings. Furthermore, it is imperative that game production incorporates continuous user feedback to properly cater to the changing demands and preferences of the player population.

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