

# Pay to play in freemium mobile games: a compensatory mechanism

Freemium  
mobile games

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## Abstract

**Purpose** – A rarely discussed type of indulgence good is “virtual” goods featured in freemium games, one of the most important platforms for online retailing. The freemium business model becomes popular amid the growth of mobile games and smartphones. The purpose of this research is to look into the factors that influence the intention to play freemium games and purchase in-game virtual goods, as well as to compare male and female millennial gamers in Indonesia, Southeast Asia’s largest mobile gaming market. This research discusses the phenomenon in the context of compensatory consumption.

**Design/methodology/approach** – This quantitative research used an online questionnaire for data collections. A total of 275 millennial mobile gamers were selected via purposive sampling. In total, there are six factors incorporated in this research: utility, self-indulgence, social interaction, competition, the intention to play freemium games and the intention to pay for virtual goods. This research used structural equation modelling (SEM) via AMOS software to test the hypotheses.

**Findings** – This research reveals that (1) utility is a negative predictor of the intention to pay for virtual goods, (2) self-indulgence is a positive predictor of the intention to play freemium games, (3) there is a mediation effect of the intention to play freemium games on the relationship between self-indulgence and the intention to pay for virtual goods, (4) social interaction is a positive predictor of the intention to pay for virtual goods, (5) competition is a positive predictor of the intention to play freemium games, (6) there is a mediation effect of the intention to play freemium games on the relationship between competition and the intention to pay for virtual goods and (7) the intention to play freemium games is a positive predictor of the intention to pay for virtual goods.

**Research limitations/implications** – This research has several limitations: first, half of the study’s millennial respondents were students whose gaming expenditures might depend on their parents or guardians’ willingness to accommodate their gaming activities. Therefore, there might be some biases in the intention to pay for virtual goods. Second, the numbers of female respondents outweigh male respondents (44.4% males), hence the sample representativeness issue in a slightly male-dominated gaming industry in Indonesia. Third, the game genres the millennial respondents mostly played were the battle royale and the shooter games. Other game genres (e.g. puzzles) might involve a different mechanism. Lastly, the authors measured the compensatory consumption concept indirectly, such as by measuring variables associated with lack of time (utility), the need for virtual achievements or online recognitions (competition), mood-related issues (self-indulgence) and lack of belongingness (social interaction).

**Practical implications** – Game developers and online retailers (e.g. Google Play Store, Android App Store and Microsoft Store) should incorporate competition, indulgence and social interaction elements when designing and promoting freemium games. Based on the results of this research, a combination of these three elements improves the likelihood of purchasing virtual goods via online retail platforms

**Originality/value** – This is the first research to demonstrate a link between online retailing and compensatory consumption, particularly in the context of freemium games. This research extends the



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literature on online retailing in the context of freemium games, which has received little attention. In addition to theoretical support, this research provides new empirical evidence for previously unexplored and unsupported relationships.

**Keywords** Online retail, Freemium games, Virtual goods, Intention to play, Intention to pay, Compensatory consumption

**Paper type** Research paper

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## Introduction

There are many channels through which games can be distributed to end-users nowadays, and there are signs of price competition among online game retailers. For instance, to attract game developers to their online retail platforms, Microsoft Store has lowered its commission fees from 30 to 12% (Warren, 2021). Similarly, online retail stores specializing in mobile games and apps, such as Google Play Store and Apple App Store, have also lowered their commission fees from 30 to 15% (Sing, 2021). To ensure a steady revenue stream, the focus shifts to expanding the customer base and facilitating in-game purchases. As a result, understanding the gamers' motivation to play and pay is critical for both developers and retailers.

In recent years, one of the highly employed business models in the gaming industry is the so-called "freemium". In the freemium business model, a large group of potential gamers are invited to play the games for free, but only a small fraction of the group will buy premium content of the games from which game developers and online retailers generate revenue (Geng *et al.*, 2015). The in-game purchase or microtransaction is similar to online retailing, where gamers search, select and purchase various virtual goods, such as game coins (virtual currency), weapons, artefacts and skins (costumes) via the Internet (Ozuem *et al.*, 2017; Balakrishnan and Griffiths, 2018). Online retail stores facilitate the sales of these virtual goods for commission fees, a percentage of the selling price (Chernonog, 2020). Indeed, a growing number of mobile apps and game developers are exploring ways of charging customers for previously free content (Punj, 2015). These developers must decide whether to offer paid content or free content while relying on in-app advertising revenues (Lambrecht *et al.*, 2014). The global gaming market, where more and more game developers sell their products online via cloud gaming, was valued at US\$ 162.32 bn in 2020 (Mordor Intelligence, 2020).

The purpose of this research is to look into the factors that influence the intention to play freemium games and purchase in-game virtual goods, as well as to compare male and female millennial gamers in Indonesia, Southeast Asia's largest mobile gaming market. This research discusses the phenomenon in the context of compensatory consumption. We measured the compensatory consumption concept indirectly, such as lack of time (utility), the need for virtual achievements or online recognitions (competition), mood-related issues (self-indulgence) and lack of belongingness (social interaction). A previous study by Ringle *et al.* (2019) suggests that compensatory behaviour due to psychological reactance (e.g. loss of freedom) can emerge when consumers have restricted access to touch the products on display, which is a characteristic of online retail. To the best of our knowledge, this is the first research that connects online retail and compensatory consumption theory.

## Literature review

*Freemium games: a case of online retailing*

In "The Future of Retailing", Grewal *et al.* (2017) highlighted the role of smartphones or mobile technology on future retail. Many goods are offered online via mobile apps, and some of them

are virtual or physically intangible (Laroche *et al.*, 2005). Virtual goods in online games can be anything: coins, weapons, gears, recovery items or any goods that improve gamers' competitiveness. The purchase of virtual goods in freemium games can be considered a form of online shopping and retailing where gamers search various virtual goods offered by the game developers and determine whether they are worth purchasing (Lee *et al.*, 2019). For secure and reliable in-game purchases, online retail stores, such as Google Play Store, facilitated the online transactions for commission fees (Chernonog, 2020). According to Trevinal and Stenger (2014), online shopping can be a consumption of experience (e.g. event) that goes beyond goods and services offered by retailers; online shopping can be symbolic and ritualistic where the whole shopping experience is connected to consumers' values. That is why virtual goods offered in freemium games are often tied with popular events (e.g. Christmas, New Year Eve) to encourage online purchases.

#### *Gaming as a compensatory mechanism*

Previous studies hint that playing and buying games is a compensatory mechanism or strategy. In consumer behaviour context, compensatory consumption occurs when consumption is motivated by needs that cannot be fulfilled directly; therefore, consumers seek an alternative and symbolic fulfilment which may signal to others their mastery or accomplishment in certain areas under threats (Lisjak *et al.*, 2015; Koles *et al.*, 2018; Syahrivar and Pratiwi, 2018; Syahrivar, 2021). According to Lisjak *et al.* (2015), a man who felt that others were undermining his intelligence, hence intellectually threatened, might buy a trivial board game to signal to others that he was smart. Rucker and Cannon (2019) argued that a person who learned that engaging in academic activities is irrelevant to one's success might indulge in gaming activities as a mode of escapism. Moreover, so-called symbolic gaming can occur when playing games can affirm and signal one's identity and social belonging (Van Houtum and Van Dam, 2002).

There have been some studies focusing on psychological variables that explain why gamers buy premium contents in free-to-play game applications (Guo and Barnes, 2012; Hsiao and Chen, 2016; Gainsbury *et al.*, 2016; Kim *et al.*, 2017; Hamari *et al.*, 2017; Wang *et al.*, 2020). The most cited reasons or motives for buying premium content in freemium games are to enable gamers to play continuously or without interruptions (e.g. lack of in-game points and intrusive in-game ads), to unlock items or to speed up games (Guo and Barnes, 2012; Hamari *et al.*, 2017). The ability of premium content to speed up the gaming progress, continue playing without intrusive ads and unlock additional features can be seen as an in-game utility aspect (Hsiao and Chen, 2016; Hamari *et al.*, 2017).

#### *The role of utility*

The connection between utility and compensatory consumption is not obvious. In this research, utility revolves around time or lack thereof hence the need to speed up the gameplay and decrease the number of losses or failures in each gameplay. In the work of Pocock and Clarke (2004), the authors argued that working parents who lacked time to spend with their children might engage in compensatory consumptions (e.g. dining out, going to the cinema or buying toys) to symbolize their love for their children. Their lack of time for their loved ones may induce negative emotions (e.g. parental guilt), which in turn motivate them to compensate for their shortcomings through indulgence goods and activities. Besides, negative affective states may cause compensatory consumption, such as boredom (Woodruffe, 1997; Koles *et al.*, 2018). We argue that playing freemium games without interruptions (i.e. unable to advance in the games due to lack of game points) is a mechanism to kill or pass the time and dissipate the boredom.

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Previous studies support the notion that utility motive predicts the intention to purchase premium contents (Guo and Barnes, 2012; Hamari, 2015; Hsiao and Chen, 2016). Gamers who intend to progress quickly in the game due to various factors, such as lack of time and perceived level difficulties, may find the paying feature on freemium games more attractive. Some online games are offered as premium games right away, meaning gamers are asked to pay before playing. Reviews from other gamers, featured videos and photos about the online games – the typical features of online retail stores such as Google Play Store – may trigger the online purchase. However, a previous study by Hamari *et al.* (2019a) suggests that the relationship between utility and the intention to make in-game purchases (e.g. virtual goods) is mediated by the intention to play freemium games. Gamers may first try and eventually get hooked on the freemium games. Only at a later stage, they may realize that they need to spend real money to speed up the process (e.g. level up, complete a difficult mission). It is also possible that gamers spend real money to show their support towards game developers (Marder *et al.*, 2019). Collectively, we propose the following hypotheses:

- H1. Utility has a positive effect on the intention to play freemium games.
- H2. Utility has a positive effect on the intention to pay for virtual goods.
- H3. The intention to play freemium games mediates the relationship between utility and the intention to pay for virtual goods.

#### *The role of self-indulgence*

Self-indulgence is connected to consumer emotions. Previous studies suggest that self-indulgence evokes happiness, a sense of gratification and other hedonic emotions (Rook, 1987; Kivetz and Simonson, 2002). Self-indulgence has been associated with self-gifting behaviour because both are connected to purchasing products for their pleasures (Mick and DeMoss, 1990; Heath *et al.*, 2011; Clarke and Mortimer, 2013; Gupta *et al.*, 2018). Self-gift giving is a part of compensatory consumption (Koles *et al.*, 2018; Syahrivar and Pratiwi, 2018). Previous studies, such as Young (2009) and Balakrishnan and Griffiths (2018), have noted that gaming can be a form of addiction. Addiction can also occur in the context of online gaming and retail where gamers have the urge to keep buying and collecting (rare) virtual goods throughout the games (King *et al.*, 2020).

Ramírez-Correa *et al.* (2019) argued that online games were essentially a hedonic system in which gamers hoped to experience enjoyment and fun. Previous studies have found that motivation to have fun, experience pleasure as well as satisfaction from continuously playing games and unlocking items predict the in-game purchase intention (Guo and Barnes, 2012; Hamari, 2015; Hamari *et al.*, 2019a; Ramírez-Correa *et al.*, 2019; Wang *et al.*, 2020). The rationale behind this is that game developers may intentionally offer their products (games) incomplete or at a reduced value, which leads to lower perceived enjoyment over time (Hamari, 2015). This lower perceived enjoyment can be improved by engaging in microtransaction, making the freemium games “complete” and maximizing the gamers’ overall experiences. In online retail stores, such as Play Store, games may be offered for free or premium. Gamers may engage in microtransaction at a later stage in their gaming journeys or before they even play the games thanks to other gamers’ reviews or testimonies, featured videos and photos about their favourite games. In the first scenario, the gaming intention mediates the relationship between the self-indulgence motive and the in-game purchase. In another context, anticipated enjoyment is a predictor of online gambling intention (Konietzny *et al.*, 2018). Collectively, we propose the following hypotheses:

- H4. Self-indulgence has a positive effect on the intention to play freemium games.
- H5. Self-indulgence has a positive effect on the intention to pay for virtual goods.

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- H6. The intention to play freemium games mediates the relationship between self-indulgence and the intention to pay for virtual goods.

#### *The role of social interaction*

Social factors play some roles in the microtransactions of freemium applications (Bapna and Umyarov, 2015; Gainsbury *et al.*, 2016; Wang *et al.*, 2020). They hold focal issues on why gamers continue to play online games, and social factors are believed as the critical impetus. In their study, Griffiths *et al.* (2011) showed that the social aspect of the game was the most important factor that made gamers keep playing. Similarly, Wu *et al.* (2010) suggested that social interactions could explain why people spent long hours in online games. According to Koles *et al.* (2018), people who are socially marginalized may buy products that symbolically compensate for their unattainable social advancement in their real lives. In this regard, gaming can be a means to build and strengthen social ties, somewhat virtually or symbolically.

In general, social motivation was a positive predictor of online purchase intention (Irshad *et al.*, 2020). Argo and Dahl (2020) argued that social influence could impact customers' thoughts, feelings and behaviours during the retail shopping experience. During the COVID-19 pandemic, much of our social interactions are online or virtual. To combat the feeling of isolation, adults and children may resort to social media or video games with social networking features (Riva *et al.*, 2020). In the gaming context, previous studies have found that social interaction and social influence predict the intention to play games (De Souza and De Freitas, 2017; Ramírez-Correa *et al.*, 2019). Social values held by gamers can also compel them to make in-game purchases (Wang *et al.*, 2020). The logic behind this is that gamers may feel the need to maintain and improve their online friendships (or camaraderie) with each other by not only investing their times in the games but also purchasing virtual goods that are essential to remaining in the circle (or a guild) of, let us say, advanced gamers. The types of virtual goods purchased may also reflect the in-game social status of the gamers (Hamari and Lehdonvirta, 2010). Collectively, we propose the following hypotheses:

- H7. Social interaction has a positive effect on the intention to play freemium games.
- H8. Social interaction has a positive effect on the intention to pay for virtual goods.
- H9. The intention to play freemium games mediates the relationship between social interaction and the intention to pay for virtual goods.

#### *The role of competition*

Other underlying motives of purchasing premium content on freemium game platforms are related to the fact that a variety of these games are linked to social media platforms. Gamers need achievements and expect to perform better than the others (Guo and Barnes, 2012; Hamari *et al.*, 2017). They may buy premium content to elevate their social (self-) presentation (Hamari and Lehdonvirta, 2010). This might include the ability to personalize their online characters, buy expensive virtual items and show them off on social media platforms to other gamers. Showing off what one possesses (e.g. luxury goods) for being uncompetitive in real life has also been linked to compensatory consumption (Zheng *et al.*, 2018). We argue that compensatory consumption can also be done virtually by buying premium contents or luxurious virtual goods. A previous study by Guo and Barnes (2012) confirmed the positive relationship between the need to advance (e.g. developing a powerful character) and the intention to purchase virtual goods. Meanwhile, Hamari *et al.* (2017) could not support the relationship between competition and the intention to purchase premium contents. In their subsequent study, however, Hamari *et al.* (2019b) could prove the relationship between

competition and in-app purchase intention but not the relationship between competition and the intention to reuse. We wish to test the conclusion put forward by the aforementioned authors. Owing to the inconclusive findings in the previous studies, we assume that the intention to play freemium games is a mediator in the relationship between competition and the intention to pay for virtual goods. Collectively, we propose the following hypotheses:

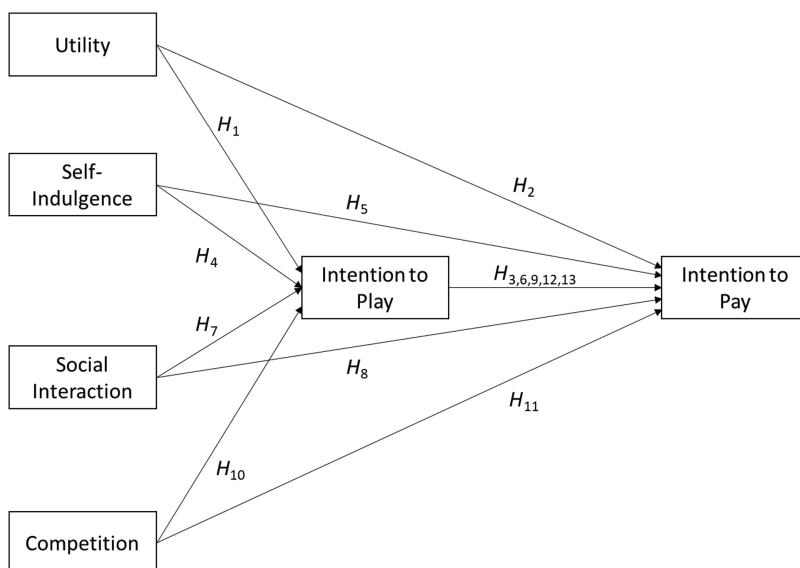
- H10.* Competition has a positive effect on the intention to play freemium games.
- H11.* Competition has a positive effect on the intention to pay for virtual goods.
- H12.* The intention to play freemium games mediates the relationship between competition and the intention to pay for virtual goods.

#### *From play to pay*

It stands to reason that gamers who intend to play freemium games must also develop the intention to pay for premium contents or virtual goods (Hamari, 2015; Hamari *et al.*, 2019a, b). Previous studies by Chin-Sheng and Chiou (2007) and Schmierbach (2010) suggested that online games that offered various extrinsic rewards (e.g. money and fame) induced competitive behaviours among gamers; they played to compete and win. Gamers understand that they must make certain sacrifices by engaging in microtransactions to win (Evers *et al.*, 2015). De Souza and De Freitas (2017) researched factors that influenced consumers to play online games and pay for premium contents; they confirmed that the intention to play freemium games was a positive predictor of the intention to pay for virtual goods. Another reason to spend real money after playing is to show support towards game developers (Marder *et al.*, 2019). Therefore, we propose the following hypothesis:

- H13.* The intention to play freemium games has a positive effect on the intention to pay for virtual goods.

Based on the aforementioned hypotheses, Figure 1 presents the theoretical framework of this research.



**Figure 1.**  
Theoretical framework

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## Research methodology

We used an online questionnaire for data collections and employed purposive sampling by targeting millennial mobile gamers in Indonesia. To accomplish this goal, we targeted several local social platforms where gamers exchanged gaming tips and displayed their virtual achievements. Apart from the age restriction (millennial category), our potential respondents had to state that they had been involved in freemium game microtransactions. In the end, we successfully gathered 275 valid respondents (44.4% Male) between 22 and 38 years old. Half of the respondents were university students and the other half were workers. The game genres that they mostly played were the battle royale and the shooter games. Moreover, we also wish to highlight that the samples were collected in late 2019 until the beginning of 2020, where the COVID-19 pandemic was still in its early phase. Nevertheless, we hesitate to attribute our findings to the pandemic due to samples taken before any strict social distancing and lockdown in Indonesia. The mention of the pandemic reveals our self-reflection on the current situation by the time this research was completed. Moreover, the pandemic was mentioned for its potential to exacerbate the already perceived negative affective states or deficits (e.g. stress, boredom, loneliness and lack of accomplishments).

Due to the unavailability of a compensatory consumption scale in this context, we measured the concept indirectly. In this research, we measured variables associated with lack of time (utility), the need for virtual achievements or online recognitions (competition), mood-related issues (self-indulgence) and lack of belongingness (social interaction). We developed our scales by adapting the measurements from the previous studies. From the previous research, we chose items with high factor loadings that suited the featured concepts (e.g. variables or factors) and only minimally reworded some items to fit the context of our research (e.g. “freemium games” instead of “games”). Following that, we retested these items (a total of 26) using exploratory factor analysis (EFA) to determine whether each item belonged to the concept that they intended to measure. The utility scale (five items), social interaction scale (five items) and competition scale (three items) were adapted from Hamari *et al.* (2017); the self-indulgence scale (six items) was adapted from Wu and Liu (2007) and Ho and Wu (2012); the intention to play scale (four items) was adapted from Wu and Liu (2007); lastly, the intention to pay scale (three items) was adapted from Ho and Wu (2012). We employed a five-Likert scale (1 = Strongly disagree, 5 = Strongly agree). Cronbach’s alphas of the measurement scales range from 0.795 to 0.953 (see Table 1).

We employed structural equation modelling (SEM) via AMOS software to test the hypotheses presented in this research. To assess the fitness of the proposed model (Figure 1), we checked the root mean square error of approximation (RMSEA), standardized root mean square residual (SRMR), the goodness of fit index (GFI), adjusted goodness of fit index (AGFI), normed fit index (NFI), Tucker–Lewis index (TLI) and comparative fit index (CFI). A guideline from Schreiber *et al.* (2006) was used in this research.

## Results

We conducted a chi-square test to see the relationship between gender identities and the questionnaire items in this research. The results are presented in Table 2.

Based on Table 2, the differences in mean values of some items are indeed due to gender differences. For instance, the results suggest that male gamers exhibit a higher motive in “I want to finish the freemium game immediately” (UTL1) than female gamers do. Male gamers also score higher in all social interaction (SOC) items such as “I want to socialize with other gamers” (SOC1). The results suggest that male gamers are more competitive (COM) than female gamers. Male gamers also show more intention to play (PLY) and pay (PAY) than female gamers. Lastly, the results suggest no difference in the self-indulgence (IND) motive between male and female gamers.

Variable	Code	Items	Means	SD	CR
Utility	UTL1	I want to finish the freemium game immediately	3.4109	1.1116	0.795
	UTL2	I do not want to spend time repeating the same level in a freemium game	3.6982	1.21419	
	UTL3	I want to immediately level up my virtual character in a freemium game*	3.9600	1.02623	
	UTL4	I want to immediately complete a construction (of a building or an arsenal) in a freemium game*	4.0691	1.03177	
Self-indulgence	UTL5	I want to proceed to the next level as soon as possible*	3.8400	1.11552	0.874
	IND1	Playing a freemium game makes me happy	4.1673	0.88438	
	IND2	Playing a freemium game reduces my stress level*	3.9345	1.00150	
	IND3	Playing a freemium game makes me relax*	3.7527	1.04844	
	IND4	Playing a freemium game stimulates my adrenaline*	3.7673	1.02719	
	IND5	Playing a freemium game stimulates my curiosity	3.8400	1.07214	
Social interaction	IND6	Playing a freemium game stimulates my imagination	3.7927	1.04844	0.921
	SOC1	I want to socialize with other gamers	3.2764	1.17299	
	SOC2	I want to share something with other gamers	3.2655	1.16773	
	SOC3	I want to participate in a special event with other gamers*	2.7673	1.27455	
	SOC4	I want to be a part of a group or a guild with other gamers*	2.9055	1.30348	
Competition	SOC5	I want to broaden my networks with other gamers through the freemium games	3.2364	1.24929	0.878
	COM1	I want to be the best in the freemium games*	3.5527	1.16203	
	COM2	I want to compete with other gamers in the freemium games*	3.3673	1.22907	
Intention to play	COM3	I want to protect my achievements in the freemium games*	3.5564	1.14922	0.893
	PLY1	I will play freemium games more often in the future*	3.0400	1.19695	
	PLY2	I intend to play a freemium game*	3.4400	1.10036	
Intention to pay	PLY3	Assuming that I have an Internet connection, I intend to play the freemium games*	3.4800	1.12152	0.953
	PLY4	I will play a freemium game for a long time*	2.9673	1.20022	
	PAY1	The likelihood of my purchasing virtual goods from this freemium game in the future is high*	2.4909	1.26250	
	PAY2	My willingness to buy virtual goods from this freemium game in the future is high*	2.4255	1.26032	
	PAY3	Overall I intend to buy virtual goods from this freemium game in the future*	2.4582	1.27335	

**Table 1.**  
The questionnaire items and construct reliability

**Note(s):** SD = Standard deviation, CR = Composite reliability and \*Retained items in the final SEM model

We conducted EFA and confirmatory factor analysis (CFA) to test and validate the constructs of the variables included in the SEM model. UTL1, UTL2, IND1, IND5, IND6, SOC1, SOC2 and SOC5 items were removed to generate a good model fit. Meanwhile, the scores of average variance extracted (AVE) of utility, self-indulgence, social interaction, competition, intention to play and intention to pay are 0.646, 0.609, 0.647, 0.587, 0.591 and 0.742 consecutively. AVE measures the amount of variance represented by a construct that requires it to be greater than 0.50 (Fornell and Larcker, 1981). The final SEM model is presented in Figure 2.

Next, we measured the Model Fit of our final SEM model based on six criteria: the RMSEA, standardized SRMR, GFI, AGFI, NFI, TLI and CFI. We used the thresholds recommended by Schreiber *et al.* (2006). Table 3 suggests that there is a good fit between the theoretical model and the data.



Freemium  
mobile games

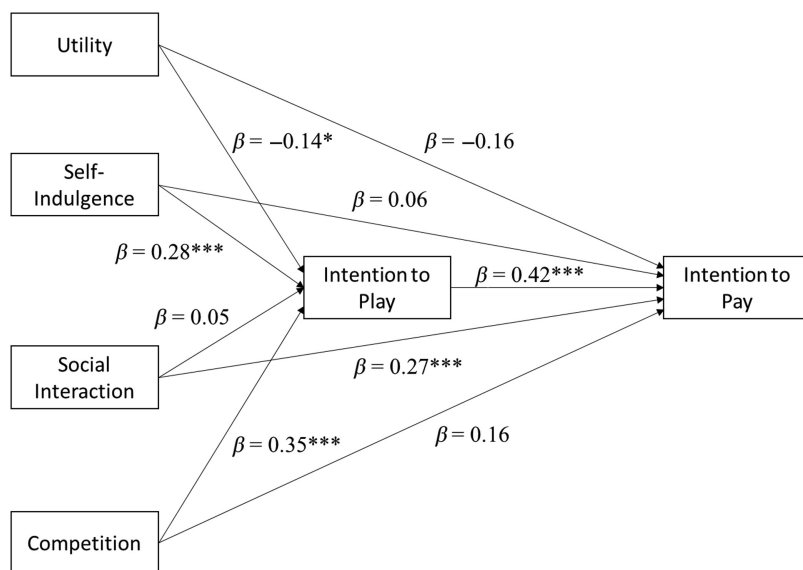
Code	Items	Male means	Female means	Sig.
UTL1	I want to finish the freemium game immediately*	3.5000	3.3399	0.034
UTL2	I do not want to spend time repeating the same level in a freemium game	3.6393	3.7451	0.514
UTL3	I want to immediately level up my virtual character in a freemium game	3.9672	3.9542	0.938
UTL4	I want to immediately complete a construction (of a building or an arsenal) in a freemium game	4.1639	3.9935	0.300
UTL5	I want to proceed to the next level as soon as possible	3.9508	3.7516	0.463
IND1	Playing a freemium game makes me happy	4.2541	4.0980	0.209
IND2	Playing a freemium game reduces my stress level	4.0082	3.8758	0.536
IND3	Playing a freemium game makes me relax	3.8525	3.6732	0.199
IND4	Playing a freemium game stimulates my adrenaline	3.9016	3.6601	0.060
IND5	Playing a freemium game stimulates my curiosity	3.9180	3.7778	0.462
IND6	Playing a freemium game stimulates my imagination	3.8279	3.7647	0.296
SOC1	I want to socialize with other gamers*	3.5738	3.0392	0.040
SOC2	I want to share something with other gamers*	3.5164	3.0654	0.030
SOC3	I want to participate in a special event with other gamers*	3.1721	2.4444	0.000
SOC4	I want to be a part of a group or a guild with other gamers*	3.3607	2.5425	0.000
SOC5	I want to broaden my networks with other gamers through freemium games*	3.5984	2.9477	0.000
COM1	I want to be the best in the freemium game	3.7459	3.3987	0.190
COM2	I want to compete with other gamers in the freemium games*	3.7131	3.0915	0.010
COM3	I want to protect my achievements in the freemium game*	3.8443	3.3268	0.050
PLY1	I will play freemium games more often in the future	3.2541	2.8693	0.071
PLY2	I intend to play a freemium game	3.5492	3.3529	0.462
PLY3	Assuming that I have an Internet connection, I intend to play the freemium games	3.6393	3.3529	0.074
PLY4	I will play a freemium game for a long time	3.0820	2.8758	0.071
PAY1	The likelihood of my purchasing virtual goods from this freemium game in the future is high*	2.9426	2.1307	0.000
PAY2	My willingness to buy virtual goods from this freemium game in the future is high*	2.8689	2.0719	0.000
PAY3	Overall I intend to buy virtual goods from this freemium game in the future*	2.9016	2.1046	0.000

**Table 2.**  
The relationship between gender identities and the questionnaire items

**Note(s):** \*Significant relationships

Based on the results of SEM analysis, it is estimated that the predictors of the intention to play freemium games explain 44.4% of its variance. In other words, as high as 55.6% of the variance in the intention to play freemium games were explained by variables that were not included in the model. Meanwhile, it is estimated that the predictors of the intention to pay for virtual goods explain 47.1% of its variance. In other words, as high as 52.9% of the variance in the intention to pay for virtual goods were explained by variables that were not included in the model.

Using the standardized regression weight, the power estimate of self-indulgence towards the intention to play freemium games is 28.2%, competition towards the intention to play freemium games is 35.2%, the intention to play freemium games towards the intention to pay for virtual goods is 42.4%, utility towards the intention to pay for virtual goods is (-) 15.5% and social interaction towards the intention to pay for virtual goods is 26.9%. The relationships among the variables are presented in [Table 4](#).



**Figure 2.**  
The final SEM model

**Note(s):** β = the standardized beta, \* =  $P(\text{sig.}) < 0.05$ , \*\*\* =  $P(\text{sig.}) < 0.001$

Fit index	Recommended threshold	Result	Note
RMSEA	<0.08	0.059	Good fit
SRMR	<0.08	0.0479	Good fit
GFI	>0.95	0.913	Moderate fit
NFI	>0.95	0.937	Moderate fit
TLI	>0.95	0.959	Good fit
CFI	>0.95	0.968	Good fit

**Table 3.**  
Model fit of the SEM model

**Note(s):** RMSEA = Root mean squared error of approximation; SRMR = Standardized root mean square residual; GFI = Goodness of fit; NFI = Normed fit index; TLI = Tucker-Lewis index; CFI = Comparative fit index

	Estimate	SE	CR	P
PLY<—UTL	0.154	0.079	1.937	0.053
PLY<—IND	0.294	0.074	3.951	***
PLY<—SCL	0.038	0.064	0.588	0.556
PLY<—COM	0.308	0.084	3.685	***
PAY<—PLY	0.547	0.098	5.566	***
PAY<—UTL	-0.225	0.096	-2.332	0.020
PAY<—IND	0.080	0.092	0.863	0.388
PAY<—SCL	0.286	0.079	3.604	***
PAY<—COM	0.180	0.104	1.729	0.084

**Table 4.**  
Regression weights of the SEM model

**Note(s):** UTL = Utility; IND = Self-indulgence; SOC = Social interaction; COM = Competition; PLY = Intention to play; PAY = Intention to pay; SE = Standard error; CR = Composite reliability; P = Significance level; \*\*\* $p \leq 0.001$

## Discussion

To better appreciate the findings, we present the summary of our research in [Table 5](#).

In terms of direct effects, our research supports the relationship between self-indulgence and the intention to play freemium games ([H4](#)), the relationship between social interaction and the intention to pay for virtual goods ([H8](#)), the relationship between competition and the intention to play freemium games ([H10](#)) and the relationship between the intention to play freemium games and the intention to pay for virtual goods ([H13](#)). Gamers seek to experience some positive affective states (e.g. happy, relax and stress-free) by playing games. They also seek to prove that they are the best (albeit virtually) through game rankings and achievements. As they advance in the freemium games, they may hope to sustain their positive feelings and achievements by investing their monetary resources in the games. As it has been discussed at length in the literature review section, playing freemium games and paying for virtual goods can be motivated by the need to compensate one's socio-psychological issues in real life, such as bad moods and the perceived inferiority due to lack of achievements or meaningful progress in life. Overall, these results are consistent with the previous studies by [Hamari et al. \(2019a\)](#); except for [H10](#), [Hamari et al. \(2019b\)](#); except for [H10](#)) and [Wang et al. \(2020\)](#). As highlighted by [Hamari et al. \(2019b\)](#), p. 813), there were limited studies that focused on competition as a predictor of the intention to play games. The authors, however, were unable to prove the relationship between competition and the intention to reuse an augmented reality game. Therefore, our findings could supplement and give a weight of evidence to the previous studies.

Our research partially supports the relationship between utility and the intention to pay for virtual goods ([H2](#)). Interestingly, our findings suggest that utility is a negative predictor of the intention to pay for virtual goods. It means that the higher the need to advance in the

Hypotheses	Results	Contributions
<a href="#">H1</a>	Not supported	(1) Less explored motive and a novel finding
<a href="#">H2</a>	Partially supported	(2) Linking the utility motive with compensatory consumption. This research further elaborates why gamers feel the need to hasten the gameplay
<a href="#">H3</a>	Not supported	(3) Contrasting male and female gamers on their utility motives
<a href="#">H4</a>	Supported	(1) Giving a weight of evidence to the previous studies
<a href="#">H5</a>	Not supported	(2) Linking the self-indulgence motive with compensatory consumption. This research further elaborates why gamers use freemium games as a mean to derive enjoyment
<a href="#">H6</a>	Supported	(3) Contrasting male and female gamers on their self-indulgence motives
<a href="#">H7</a>	Not supported	(1) Giving a weight of evidence to the previous studies
<a href="#">H8</a>	Supported	(2) Linking the social motive with compensatory consumption. This research further elaborates why gamers feel the need to improve their social interactions
<a href="#">H9</a>	Not supported	(3) Contrasting male and female gamers on their social motives
<a href="#">H10</a>	Supported	(1) Giving a weight of evidence to the previous studies and consolidating the previous studies by <a href="#">Hamari et al. (2017)</a> and <a href="#">Hamari et al. (2019b)</a>
<a href="#">H11</a>	Not supported	(2) Linking the competition motive with compensatory consumption. This research further elaborates why gamers feel the need to be competitive (beyond personality factor)
<a href="#">H12</a>	Supported	(3) Contrasting male and female gamers on their competition motives
<a href="#">H13</a>	Supported	(1) Giving a weight of evidence to the previous studies (2) Linking the purchase of virtual goods as a form of compensatory consumption which serves as a stepping stone for future research in this context (3) Contrasting male and female gamers on their intentions to play and pay

**Table 5.**  
Summary of findings

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game, the less willing millennial gamers to make an in-game purchase. We argue that a low monetary value of the freemium games may explain why, despite wanting to complete the game as soon as possible (high utility), millennial gamers hesitate towards spending their money on the freemium games. Wang *et al.* (2020) argued that monetary value was a predictor of in-game purchases. Another possible explanation for the negative result is the risk associated with online retailing: whether the virtual goods available for purchase will serve the gamers' objectives (e.g. making a difficult level easier, levelling up faster or obtaining desirable virtual items). A previous study by Carvalho (2021) has noted the issue concerning the transparency and the trustworthiness of paid "loot box" that contains a random assortment of virtual goods. Because this online retail practice is similar to online gambling (Ide *et al.*, 2021), it may reduce gamers' intentions to make an in-game purchase.

In terms of mediation effects, our research supports the mediation effect of the intention to play freemium games on the relationship between self-indulgence and the intention to pay for virtual goods (H6). Previous studies by Hamari *et al.* (2017, 2019b) found that enjoyment and indulging children had no significant and direct relationships with gamers' intention to purchase premium contents. Our findings reveal that that the relationship between self-indulgence and the intention to pay is indirect and is mediated by the intention to play. Our research also supports the mediation effect of the intention to play on the relationship between competition and the intention to pay for virtual goods (H12). A previous study by Hamari *et al.* (2017) found that competition had no direct effect on in-game purchase activity. Meanwhile, Hamari *et al.* (2019b) found that competition had a direct effect on in-app purchase intention. Previous research by Hamari *et al.* (2017, 2019b) focused on direct effects rather than potential mediation effects. Therefore, our findings could supplement and give a weight of evidence to the previous studies.

Some hypotheses cannot be supported in this research: first, the relationship between utility and the intention to play freemium games (H1) cannot be supported. We argue that symbolic gaming (Van Houtum and Van Dam, 2002) may play a role in gaming culture, especially among gamers with utility motives. In this sense, they are not that much interested in playing longer hours; however, playing freemium games to some degree makes them feel that they are a part of an online community (Laato *et al.*, 2021). A previous study by Vilasis-Pamos and Pires (2021, p. 7) classified gamers into five distinct categories; one of them was "poser-gamer" where teenagers pretended that they were gamers, perhaps as a way to keep up with a gaming trend among their peers. Besides, we notice the contradictory ideas between rushing the gaming progress and a latent need to derive pleasure or distract oneself from the harsh reality of life through gaming activities.

Our research cannot support the mediation effect of the intention to play freemium games on the relationship between utility and the intention to pay for virtual goods (H3). As previously mentioned, utility has a direct and negative effect on the intention to pay for virtual goods. We argue that gamers with a high utility motive are not "true gamers". They lack the passion for freemium games, and they are not highly involved in the gaming process. They may play freemium games to kill time, which also explains why they are less interested in investing their money in freemium game platforms.

Our research cannot support the relationship between self-indulgence and the intention to pay for virtual goods (H5). We argue that being able to play freemium games for free remains one of the sources of self-indulgence.

Our research cannot support the relationship between social interaction and the intention to play freemium games (H7) and the mediation effect of the intention to play freemium games on the relationship between social interaction and the intention to pay for virtual goods (H9). In the context of the battle royale game and the shooter games, we argue that the desire to compete is much more pronounced than the desire to socialize. Both genres are usually face-paced games, hence less opportunity to socialize with others. Nevertheless, we wish to point

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out that the social interaction variable only consists of two items after the EFA and CFA procedures, which may implicate the results. Therefore, we suggest that future research can retest the proposed relationships.

Our research cannot support the relationship between competition and the intention to pay for virtual goods (H11). In the context of competition and fair play, we argue that the stigmatization among gamers concerning those who pay to win may prevent them from spending their money on freemium game platforms.

#### *Theoretical contributions and managerial implications*

The theoretical contributions of this research are as follows: first, our paper extends the literature in online retailing and compensatory consumption theory, especially in the context of freemium games which is less explored. Our paper reveals the socio-psychological motives of consumers for engaging in online retailing and shopping of virtual goods. A previous study by [Ringle \*et al.\* \(2019\)](#) suggests that compensatory behaviour due to psychological reactance (e.g. loss of freedom) can emerge when consumers have restricted access to touch the products on display, which is a characteristic of online retail. The precise mechanism by which online retailing and in-game purchases can compensate for one's perceived lack of accomplishment, lack of meaningful friendships, escapism from real-life pressures and a variety of other emotional-related problems merits future investigations. A previous study by [Van Houtum and Van Dam \(2002\)](#) suggests that symbolic gaming can occur when games, in general, are perceived as a medium for affirmation of one's identity and social belonging. Second, the results of our research provide new empirical evidence for relationships previously unsupported. For instance, we manage to prove the relationship between competition and the intention to play freemium games, which were unsupported in [Hamari \*et al.\* \(2019b\)](#). Third, our research also reveals the mediation effects that were never the focus of the previous studies (e.g. [Hamari \*et al.\*, 2017, 2019b](#)). For instance, our research reveals that the intention to play freemium games mediates the relationship between competition and the intention to pay for virtual goods. This mediation effect was not incorporated in the previous studies (e.g. [Hamari, 2015; Hamari \*et al.\*, 2017, 2019a, b](#)). Fourth, our research also reveals some irregular results, such as the negative relationship between utility and the intention to pay for virtual goods. These irregular results, which we have attempted to justify, provide an opportunity for a more in-depth study to reveal the exact mechanism. Lastly, we also wish to highlight that the study of freemium games in the context of Indonesia is less explored despite the country being the 16th largest market in the world and number one in Southeast Asia ([Newzoo, 2017](#)). Therefore, our research has contributed to the population gap and a stepping stone towards future research in this context.

The managerial implications of this research for game developers and online retailers are as follows: First, we recommend that game developers integrate the competition element in the games they are developing. Subsequently, online retailers (e.g. Google Play Store, Android App Store, Microsoft Store) can emphasize this element to attract millennial gamers. Our research indicates that millennials gamers feel the need to be the best or the winner, resulting in a sense of accomplishment (albeit virtually). Second, game developers should make their games fun, relaxing and visually stimulating since our findings indicate that millennials gamers use games as a mechanism by which they reduce life pressures and stress. Meanwhile, online retailers can improve the visual of their online stores (e.g. choice of colours, layouts and promotional statements) to make visitors more relax. At the same time, our results suggest that game developers may balance the competition and self-indulgence elements of freemium games. We argue that too much emphasis on competition elements may trigger stress, which is counterintuitive to the gamers' self-indulgence motive. Third, games should have features that enable them to interact with other gamers thereby expanding their

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networking activities. Our research reveals that social interaction is a positive predictor of in-game purchase (e.g. virtual goods and premium contents). This result suggests that gamers are willing to spend their money to retain their online friendships with fellow gamers. Online retailers can help this social interaction process by making available gamer forums by which gamers can share their experiences after purchasing games and virtual goods. Lastly, we believe that a combination of indulgence, competition and social interaction elements improve the likelihood of spending money on freemium game platforms. When promoting and selling freemium games or apps through Google Play, App Store and other online retail and distribution platforms, game developers and online retailers can customize their marketing and communication messages, including images and previews, to reflect elements of indulgence (e.g. fun), competition and social interaction.

#### *Limitations and future research directions*

This research has several limitations: first, half of our millennial respondents were students whose gaming expenditures might depend on their parents or guardians' willingness to accommodate their gaming activities. Therefore, there might be some biases in the intention to pay for virtual goods. For instance, [Muzellec et al. \(2016\)](#) highlighted the parental role in children's gaming experience. Parents may attempt to compare each other on how they treat their children (e.g. choices on foods, games and sports), a so-called social comparison ([Hogreve et al., 2020](#)). Future research targeting non-working Millennials may also incorporate moderating variables, such as the role of parental support, to generate a better picture. Second, the numbers of female respondents outweigh male respondents (44.4% males), hence the sample representativeness issue in a slightly male-dominated gaming industry in Indonesia. In 2017, Newzoo reported that 56% of millennial gamers in Indonesia were male. Future research may target male gamers. It is also interesting to compare gamers from two generations (e.g. Millennials versus Gen Z). Third, the game genres our millennial respondents mostly played were the battle royale game and the shooter games. Other game genres might involve a different mechanism. Future research may also investigate whether similar conclusions or mechanisms can be derived from different game genres (e.g. puzzles and survival horror). Lastly, we measured the compensatory consumption concept indirectly, such as by measuring variables associated with lack of time (utility), the need for virtual achievements or online recognitions (competition), mood-related issues (self-indulgence) and lack of belongingness (social interaction). Future research may measure this concept directly when a valid compensatory consumption scale that suits this context is available.

#### **Conclusion**

Mobile games that employ a freemium business model can be considered a recent trend in the context of online retail. The freemium business model has become a popular source of income for game developers and retailers. Millennial gamers play freemium mobile games and spend money to improve their moods and to signal to their peers that they are better or competitive, albeit virtually. A motive to build social networks and improve social standing as reported in the previous studies can also be found in our research, especially concerning the purchase of virtual goods or premium contents. The need to avoid being marginalized (also) in the virtual world might drive millennial gamers to spend money on their favourite freemium mobile games. The aforementioned motives that we have revealed and discussed throughout our research are linked to compensatory consumption. Meanwhile, millennial gamers who constantly think about how to progress or complete the games faster are shown to be less inclined to spending money on freemium game platforms. Negative stigma "pay-to-play" might refrain gamers from spending money for the sake of winning. Overall, game developers

and retailers can gain a competitive advantage by understanding the socio-psychological motives behind gaming activities and in-game purchases. Finally, game developers and retailers using a freemium business model follow the trajectory of modern retailing.

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